



Libby Railyard Response Action 2004 Draft Construction Completion Report

**Libby Railyard
Libby, Montana**

DRAFT

**The Burlington Northern and
Santa Fe Railway Company**

**K/J 046022.11
December 2004**

Kennedy/Jenks Consultants

**LIBBY RAILYARD RESPONSE ACTION 2004
DRAFT CONSTRUCTION COMPLETION REPORT
BNSF Railyard, Libby, Montana**

DRAFT

**Prepared for
THE BURLINGTON NORTHERN AND SANTA FE RAILWAY COMPANY**

**Prepared by
KENNEDY/JENKS CONSULTANTS
ENGINEERS AND SCIENTISTS
32001 32nd Avenue South, Suite 100
Federal Way, Washington 98001
(253) 874-0555**

K/J 046022.11

December 2004

TABLE OF CONTENTS

	<u>Page Number</u>
LIST OF TABLES.....	iv
LIST OF APPENDICES	iv
1.0 INTRODUCTION.....	1-1
1.1 PURPOSE AND OBJECTIVES.....	1-2
1.2 SITE LOCATION.....	1-3
1.3 RELEVANT DESIGN DOCUMENTS.....	1-3
1.4 PROJECT REPORTING REQUIREMENTS.....	1-4
1.5 REQUEST FOR INFORMATION FORMS.....	1-4
2.0 DESCRIPTION OF WORK.....	2-1
2.1 TRACK REMOVAL/ DEMOLITION	2-1
2.2 EXCAVATION/CAPPING.....	2-2
2.2.1 Zone 1/2/3.....	2-3
2.2.2 Zone 4/6/7.....	2-3
2.2.3 Zone 5.....	2-4
2.2.4 Zone 8.....	2-4
2.3 SOIL SAMPLES.....	2-4
2.3.1 Characterization Samples	2-5
2.3.2 Clearance Samples	2-6
2.4 SOIL AND TRACK DISPOSAL	2-6
2.5 HEALTH AND SAFETY	2-7
2.6 AIR MONITORING.....	2-7
2.7 SOIL AND RAILROAD TIE DISPOSAL CHARACTERIZATION.....	2-8
2.8 REPORTING AND COORDINATION ACTIVITIES	2-8
2.9 FINAL SITE RESTORATION	2-8

TABLE OF CONTENTS

	<u>Page Number</u>
3.0 CONSTRUCTION QUALITY ASSURANCE	3-1
3.1 EARTHWORK	3-1
3.2 CONSTRUCTION MATERIALS VERIFICATION	3-1
3.3 CAP REPLACEMENT	3-1
4.0 QUANTITIES OF MATERIALS	4-1
5.0 CONSTRUCTION COMPLETION INSPECTION	5-1
6.0 ARAR ANALYSIS	6-1
REFERENCES	R-1

TABLE OF CONTENTS

LIST OF TABLES

TABLE 1	QUANTITIES OF MATERIALS
----------------	--------------------------------

LIST OF APPENDICES

APPENDIX A	CONSTRUCTION DRAWINGS
APPENDIX B	REQUEST FOR INFORMATION (RFI) FORMS
APPENDIX C	SOIL SAMPLE LOCATION DRAWINGS
APPENDIX D	ANALYTICAL DATA TABLES
APPENDIX E	CONSTRUCTION QUALITY ASSURANCE
APPENDIX F	DOCUMENTATION OF MATERIAL TAKEN TO ASBESTOS CELL AT LINCOLN COUNTY LANDFILL
APPENDIX G	DOCUMENTATION OF IMPORTED CLEAN BACKFILL
APPENDIX H	APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS

THE BURLINGTON NORTHERN AND SANTA FE RAILWAY COMPANY
LIBBY RAILYARD RESPONSE ACTION 2004
DRAFT CONSTRUCTION COMPLETION REPORT

1.0 INTRODUCTION

This construction completion report summarizes the Libby Railyard Response Action 2004 (Response Action), as supported by record drawing details, for the abatement of soil containing asbestos fibers in the form of tremolite/actinolite (Libby amphibole) and visibly identified hydrated biotite (an indicator of Libby amphibole) identified along portions of the rail lines at the Libby, Montana railyard, herein referred to as the Site. This Response Action was conducted to comply with an Agreed Order on Consent (AOC) between The Burlington Northern and Santa Fe Railway Company (BNSF) and the United States Environmental Protection Agency, Region VIII (EPA), which was executed by BNSF on 17 April 2003.

The Site is owned and operated by BNSF. The primary objectives of the Response Action were to remove or cap surface soils at the Libby Yard potentially impacted by Libby amphibole. The mitigation activities were conducted in accordance with the Revised Response Action Work Plan (Kennedy/Jenks Consultants, August 2004) and modifications based on supplemental soil sampling data collected during 2004 construction activities. EPA approved The Revised Response Action Work Plan as final on 1 September 2004.

The Response Action activities performed at specific tracks within the Libby Yard were based on soil sample analysis conducted by EMR Incorporated (EMR). Based upon the sampling data, it was decided that a specific portion of the soils within the Site would undergo excavation to remove and dispose of soils containing detectable Libby amphibole, and other specific portions of the Site would be capped in place (without excavation) to prevent future Libby amphibole exposure. Because the Site is an active rail facility with switches and sidings still used by BNSF, track reconstruction is planned for up to two tracks along portions of the excavation zone.

Railroad tracks within the zone of excavation and the zones of capping were removed to allow access to soil potentially containing Libby amphibole or visible hydrated biotite beneath the track structures. In the zones scheduled for excavation, soil potentially containing Libby amphibole or hydrated biotite was excavated, and underlying soil was sampled concurrently to evaluate whether detectable Libby amphibole remained (clearance samples). Excavation proceeded until laboratory results indicated that Libby amphibole fibers were not detected in the soil samples (generally no more than 29 to 35 inches below the top of the adjacent ties comprising the existing BNSF main line) or to a depth of at least 4 feet. At several locations, excavation reached a depth greater than 4 feet, but clearance samples indicated detectable Libby amphibole had been removed. At one small location, excavation reached at least 6 feet, but clearance was not achieved, as described below. In the other portions of the Site, soil containing Libby amphibole or hydrated biotite was capped in place.

The removed rails were decontaminated onsite by pressure washing. The decontaminated rails were removed for re-use or scrap. The removed railroad ties were decontaminated by first pressure washing and then cleaning through a conveyor system of high-pressure nozzles inside a specially designed railroad tie washer. The decontaminated ties will be disposed at the Montana Waste Systems Landfill in Great Falls, Montana.

Kennedy/Jenks Consultants prepared the Response Action design and provided construction observation services on behalf of BNSF. EMR performed asbestos oversight, sampling, personal, and perimeter monitoring on behalf of BNSF. EMR's oversight included air monitoring, visual inspection, confirmation soil sampling, and monitoring for visible dust or particle emissions. In addition, EMR completed daily soil removal reports in conjunction with Kennedy/Jenks Consultants. The Contractor (Envirocon) prepared daily safety reports in conjunction with Kennedy/Jenks Consultants. BNSF will be responsible for final track reconstruction, which is not part of the Response Action elements needed for compliance with the AOC. Project reporting requirements, including record drawings (sometimes called "as-built" drawings), construction quality assurance/quality control (QA/QC), material submittals, health and safety plan, and a final inspection report are provided in the appendices of this report.

1.1 PURPOSE AND OBJECTIVES

The purpose of the Response Action at the Libby Yard was to comply with the work requirements of the AOC.

The Response Action objectives included the following:

- Remove soil potentially containing Libby amphibole from areas of the railyard that will continue to contain active tracks in the future.
- Cap soil potentially containing Libby amphibole in the areas of the railyard that are not likely to contain active tracks in the future.
- Decontaminate and recycle or dispose of rail, ties, and other track materials that will be demolished to allow removal or capping of soil in areas of the railyard potentially containing Libby amphibole.
- Provide a final subgrade elevation in the removal areas, with appropriate thickness of sub-ballast material beneath the final subgrade, to permit BNSF to reconstruct track consistent with current and foreseeable future operational needs.

1.2 SITE LOCATION

The Site is located within the town of Libby, Montana, as shown on Record Drawing Sheet 1 in Appendix A-1. The Response Action was conducted on BNSF property located north of the BNSF main line track. The eastern limit of Response Action activities is the switch located between the BNSF main line and the railyard at the eastern end of the yard. The western limit of Response Action activities is the switch located between the BNSF passing siding and the railyard at the western end of the yard. Response Actions were also conducted on the former W. R. Grace facility (a 10-foot-wide strip of property belonging to the City of Libby that runs east/west immediately north of the Site). This 10-foot strip is located west of the Highway 37 overpass and north of the BNSF property line. In addition, an unused scale house was mitigated, demolished, and disposed as potential asbestos-containing material (ACM), and a concrete/steel freight car scale was excavated and removed; these structures were located on Track 4 east of Highway 37, as shown on Record Drawing Sheet 4A in Appendix A-1.

1.3 RELEVANT DESIGN DOCUMENTS

The following documents provide the basis for design and construction of the Libby Railyard Response Action performed in 2004:

The following documents provide the basis for design and construction of the Libby Railyard Response Action performed in 2004:

- *Evaluation of Conceptual Response Options* dated June 2004, prepared for BNSF by Kennedy/Jenks Consultants.
- *Project Manual, The Burlington Northern and Santa Fe Railway Company, Libby Rail Yard Asbestiform Fiber Removal, Libby, Montana* (project construction specifications) dated July 2004, prepared for BNSF by Kennedy/Jenks Consultants, which includes *Project Specification, BNSF Libby Railyard Hydrated Biotite Removal, Libby, Montana* dated July 2004, prepared for BNSF by EMR.
- *Burlington Northern and Santa Fe Railway Company, Libby Railyard, Response Action* (design drawings) by Kennedy/Jenks Consultants dated 26 July 2004, prepared for BNSF by Kennedy/Jenks Consultants.
- *Volume III, Health and Safety Plan, BNSF Libby Rail Yard Libby Amphibole Impacted Soil Removal, Libby, Montana* dated July 2004, prepared for BNSF by EMR.
- *Revised Response Action Work Plan, Libby Railyard, Libby, Montana* dated August 2004, prepared for BNSF by Kennedy/Jenks Consultants.
- *Approval of Revised Work Plan for Libby Railyard* dated 1 September 2004, prepared by EPA.

1.4 PROJECT REPORTING REQUIREMENTS

Project reporting requirements, including record drawings, construction QA/QC, material submittals, health and safety plan, and final inspection report are provided in the appendices of this report. The appendices include:

- Appendix A Construction Drawings
 - A-1 Record Drawings
 - A-2 Construction Design Drawings
- Appendix B Request for Information (RFI) Forms
- Appendix C Soil Sample Location Drawings
- Appendix D Analytical Data Tables
- Appendix E Construction Quality Assurance
 - E-1 Soil Compaction Data
 - E-2 Submittals
- Appendix F Documentation of Material Taken to Asbestos Cell at Lincoln County Landfill
- Appendix G Documentation of Imported Clean Backfill
- Appendix H Applicable or Relevant and Appropriate Requirements

1.5 REQUEST FOR INFORMATION FORMS

During construction, any modifications, clarifications, changes, or additions to the Draft Response Action Work Plan (July 2004) were documented and submitted to EPA for approval. These modifications were documented to EPA as standard RFIs. Copies of the RFIs are included in Appendix B. The RFIs are included in the Response Action summaries for the relevant portions of the Site.

2.0 DESCRIPTION OF WORK

The Response Action occurred from September 2004 to November 2004.

Envirocon, Kennedy/Jenks Consultants, and EMR safety personnel conducted daily safety meetings at the beginning of each workday. Most work was performed between 7:00 a.m. and 5:30 p.m., Monday through Saturday. Completion of the work required the use of a variety of heavy earthmoving equipment to perform excavation, soil removal, and cap/backfill installation. Best management practices (BMPs) were used throughout the construction area and haul routes to help mitigate potential airborne Libby amphibole fibers, control road dust, and manage stormwater.

The following consultants and contractors performed the construction and oversight:

Consultant/Contractor	Work Performed
Kennedy/Jenks Consultants	Resident Engineer, Construction Observation
EMR, Inc.	Construction Observation for asbestos issues
HKM Engineering, Inc.	Surveying and Compaction Testing
Envirocon, Inc.	General Contractor
Montana Railroad Services	Rail Removal Subcontractor
U.S. Environmental Protection Agency	Regulatory Agency
Camp Dresser & McKee (CDM)	Agency Oversight
Volpe Center	Agency Oversight

The following sections describe the construction activities of the Response Actions for the relevant segments of Libby Yard. Record drawings documenting the construction are enclosed in Appendix A-1. Construction design drawings are enclosed in Appendix A-2.

2.1 TRACK REMOVAL/DEMOLITION

Rails and other track materials (OTM) from Tracks 1, 2, 3, 4, the West Spurs, and a portion of Track 5 were removed/demolished. OTM includes metallic appurtenances such as tie plates, spikes, joint bars, and bolts. The demolition is shown in Appendix A-2, Drawings D-1 through D-11. Tracks 1, 2, and connections to Track 5 and the City of Libby's West Spur will be reconstructed later. The anticipated reconstruction materials are concrete ties and 136-pound-per-yard ribbon rail.

The removed/demolished items were disposed as follows:

- Rails and OTM were removed and decontaminated by pressure washing, trucked to the Ripley Siding (approximately 6 miles northeast of the Site), and loaded onto railcars for final disposal as salvageable property belonging to Montana Railroad Services. A total of 28,182 linear rail feet (14,091 track feet) was removed for salvage. BNSF retained specialized rail parts such as track switches and tapered rail sections used to join rails of differing sizes.
- The Scale House (Appendix A-2, Drawing D-11) was demolished and disposed as potential ACM at the Lincoln County landfill.
- The concrete supports underlying the scale track located along Track 4 were demolished by jackhammer. Most of the structure was removed to the base of concrete, which was more than 12 feet below grade, and backfilled with clean imported sub-ballast material. An approximately 20-foot-long slab at the eastern end of the scale track structure was removed to a depth of at least 1 foot below original grade, covered with approximately 1 foot of adjacent native Zone 4/6/7 soil, then capped with geotextile and 12 inches of sub-ballast.
- All ties were removed from Tracks 1 and 2, part of Track 3, the removed portion of Track 5, and the portion of the West Spurs to be reconstructed. Most remaining ties were removed from the areas to be capped (Track 4, part of Track 3, and the remainder of the West Spurs). All removed ties were decontaminated by pressure washing on a conveyor device and inspected by EMR prior to stockpiling. The ties were loaded into BNSF railcars for transport. As of December 2004, between 7,900 and 8,000 decontaminated ties are scheduled for transport by rail to the Montana Waste Systems landfill in Great Falls, Montana, for final disposal. The quantity of 8,000 was agreed upon with the Contractor, which accounts for fragmented ties and statistical uncertainty in the count. EMR conducted confirmation sampling for asbestos fibers on random samples comprising approximately 5% of the decontaminated ties. The ties were analyzed with polarized light microscopy (PLM) by Analytica Group of Thornton, Colorado. No asbestos was detected in samples collected from the ties, and the ties were not classified as ACM. Two truckloads of wood tie debris were transported to the asbestos cell of the Lincoln County landfill.

2.2 EXCAVATION/CAPPING

In areas of the Site located north of the BNSF main line track, soil believed to contain Libby amphibole was either excavated and backfilled with sub-ballast material or capped in place by sub-ballast material with a geotextile liner. Montana Railroad Services removed track and ties to provide access to the underlying soil.

2.2.1 Zone 1/2/3

Before the geotextile liner and clean backfill material (railroad sub-ballast) were set in place, soil within Zone 1/2/3 that was believed to contain Libby amphibole was excavated to a tan clay layer [approximately 18 inches below ground surface (bgs)], or to the depth required to remove all visible hydrated biotite. After soil had been excavated to the prescribed depths, confirmation soil samples were collected to verify removal of Libby amphibole. One location (sample BN-71001) failed to achieve clearance, but the final excavation elevation was 6 feet below the original ground surface, which is greater than EPA's 4-foot standard for leaving potentially impacted soil in place. The location with remaining detectable Libby amphibole is shown on Appendix A-1, Record Drawing Sheet 3 and on Appendix C, Sheet C-4S.

After acceptable clearance results were received from Zones 1/2/3, the Contractor performed additional excavation and backfilling (clean imported fill) to achieve design sub-grade elevation in these areas. Appendix A-1, Record Drawing Sheets 3 and 4 show the areas as follows:

- Zone 1 was excavated to a final elevation at least 31 inches below the top of the adjacent mainline tie, geotextile liner installed, and the area backfilled with a minimum of 18 inches of clean imported sub-ballast material.
- Zone 2/3 was excavated to a final elevation at least 25 inches below the top of the adjacent mainline tie, geotextile liner installed, and the area backfilled with a minimum of 12 inches of clean imported sub-ballast material.

2.2.2 Zone 4/6/7

Soil located in Zone 4/6/7 believed to contain Libby amphibole was capped in place by removing most railroad ties, placing a geotextile liner over the existing soil, and capping with a geotextile barrier and 12 inches of imported clean backfill (railroad sub-ballast). Potentially impacted surface soil within Zone 6 was removed as part of the clearing and grubbing activities along the northwestern property boundary and disposed in the asbestos cell of the Lincoln County landfill. Zone 7 constituted a sub-zone of Zone 4 that was identified in design documents to provide a location to stockpile decontaminated ties, if needed. Zone 7 was constructed identically to the remainder of Zone 4 and was never utilized for stockpiling materials in the manner originally identified in the Project Manual and Design Drawings.

EPA approved RFI 2004-01, which provided clean soil (as determined from soil sample results) from over-excavation within Zone 1/2/3 to be used as backfill comprising no more than 6 inches of the 12-inch cap in Zone 4/6/7. In selected locations on the eastern side of the Site, the uppermost 6 to 9 inches of the 12-inch cap consisted of clean imported sub-ballast material.

2.2.3 Zone 5

Soil containing Libby amphibole within Zone 5 was scraped into Zone 4/7 (Shown on Record Drawing Sheet 3) where it was capped in place along with the Zone 4/7 soil. The excavated material comprised approximately 6 inches of soil in a 10-foot strip located immediately north of the BNSF property line, on the former W. R. Grace facility that is currently owned by the City of Libby. The excavated soil was replaced with clean imported backfill (railroad sub ballast). Geotextile was not placed beneath the cap materials, because the underlying soil had been previously remediated as part of the former W. R. Grace facility.

2.2.4 Zone 8

As shown on Record Drawing Sheet 4, two areas of surface soil south of Track 5 (east of the Highway 37 overpass) were excavated and capped with clean imported sub-ballast material. These excavation/backfill areas are referenced on Record Drawing Sheet 4 as Zone 8. Zone 8 was not previously identified in the referenced design documents. The areas excavated were based on characterization soil samples BR-28001 to BR-30005 shown in Appendix C, Sheet C-5S. EMR collected characterization soil samples south of Track 5 during the 2004 remediation activities. Rather than being capped as originally proposed, the areas that contained detectable Libby amphibole in the soil were excavated and backfilled with clean imported sub-ballast to allow BNSF track crews to relocate Track 5 in the future, if necessary. Soil was excavated approximately 8 to 12 inches to the above-referenced tan clay layer, and clearance samples were obtained. The excavated area was covered with geotextile and backfilled with a minimum of 8 to 12 inches of clean imported railroad sub-ballast. Based on data from soil samples BR-29002 through BR-29004, the area between the two portions of Zone 8 did not require excavation.

2.3 SOIL SAMPLES

Soil sample categories include characterization samples and clearance samples. In general, soil sample nomenclature consists of a prefix and a five-digit number. The prefix designates the type of sample, and the number identifies the sample location. Most samples are four-point composites collected every 50 feet over a distance of 200 feet; thus, four sub-samples comprise each composite sample. The sample numbers usually increase from east to west (e.g., composite sample BR-29000 is located west of sample BR-28000 and east of composite sample BR-30000). Where parallel rows of samples were collected along parallel tracks, the composite numbers usually increase from north to south (e.g., composite sample BR-11000 is located north of composite sample BR-12000). Individual sub-samples within the zone of a composite sample are identified by a digit in the right-hand column (e.g., BR-12001, BR-12002).

In April 2001, characterization soil samples were collected along the main line track at milepost locations and random locations within the Site. In 2002, soil samples BN-01000 through BN-22000 were collected in 100-by-100-foot square grids from which a five-point composite was collected. The sample data from 2001 and 2002 were reported to EPA previously.

Sample prefixes are designated as follows:

- Soil characterization sample names begin with no prefix or prefix BN.
- Clearance samples have prefixes of BR, BX, and BY. BR was used during the first sampling for clearance. If the sample failed clearance, and further excavation was performed, the next clearance sample was given the BX prefix. In one instance, additional excavation was required and the sample prefix BY was used to indicate that over-excavation. One soil clearance sample collected at a depth of 6 feet bgs was designated as sample BN-71001 (a characterization prefix) because it contained detectable Libby amphibole as discussed elsewhere in this report. Clearance was not achieved for this location.

2.3.1 Characterization Samples

Railroad bed characterization data was compiled from a variety of sample collection efforts undertaken by EMR from 2001 to 2004, as well as the visual mapping of hydrated biotite in October 2001. Supplemental characterization soil sampling was conducted in July 2004 to identify the western limit of the excavation zone. EMR established a grid system for soil sampling that included metal stakes to assist in defining the boundaries of impacted areas. Surface soil samples were analyzed by a variety of methods between October 2001 and October 2004, including PLM Method 9002, Issue 2, and PLM Method 9002-VE in accordance with the National Institute for Occupational Safety and Health (NIOSH) methods. Samples collected in early 2001 were submitted to Clayton Group Services for analysis by "EPA asbestos in soil method," which involved separating the coarse, medium and fine fractions of samples and conducting a combination of TEM semi-quantitative and PLM Method 600 analyses on those fractions. Areas showing impacts in the 2001 samples were excavated or capped in 2004.

Characterization soil sample locations for samples collected in 2001 were submitted to Mr. Mark Raney of Volpe National Transportation Systems Center in a 25 January 2002 facsimile transmittal. Characterization soil sample results are shown in Appendix D, Table D-1. Laboratory reports for characterization soil samples collected before 2004 were submitted electronically to EPA from EMSL Laboratories and via facsimile upon receipt by EMR. Hard copies of those reports, along with results from soil samples collected in 2004, will be submitted under separate cover to EPA by EMR.

Soil samples were collected in October 2002 and analyzed for other compounds in order to complete the soil profile for disposal. These samples (T1-EO-100 through T4-WO-400) were analyzed for gasoline-range hydrocarbons, diesel-range hydrocarbons, lube oil-range hydrocarbons, total metals, and volatile organic compounds (VOCs) by EPA Method 8260B. Soil analytical results from this event are included in Appendix D, Table D-6.

2.3.2 Clearance Samples

After soil removal from Zone 1/2/3, clearance soil samples were collected at 50-foot intervals along the rail lines, including one composite sample per every 200-foot length of track. As described above, clearance sample prefixes are BR, BX, and BY. The laboratory retained the discrete samples comprising the composites pending receipt of composite sample test results. Sample locations are shown in Appendix C, Sheets C-2S to C-6S. Soil analytical results from clearance samples are included in Appendix D, Table D-2.

The samples were collected from the surface of the excavation bottom and submitted for asbestos analysis by EMSL Laboratories in Libby, Montana. Prior to submittal, CDM personnel reviewed and verified sample paperwork and nomenclature. Sample coordinates were obtained by measuring from a baseline established along the BNSF main line track by HKM Engineering, the sample location was marked by a plastic flag driven into the ground, and the location was established and documented with a hand-held global positioning system (GPS) device. If the composite soil sample tested positive for Libby amphibole, the discrete soil samples were analyzed to determine which sample location contained asbestos. The areas with detectable results were re-excavated in a 25-foot radius around the sample locations (areas previously cleared or areas to be capped were not included in the excavation). The soil samples were collected in accordance with the USEPA 540-R-97-028 document, *Superfund Method for the Determination of Releasable Asbestos in Soils and Bulk Materials*, Appendix 15 of the Quality Analysis Program Plan (QAPP) for the USEPA Libby Mine project. The samples were analyzed for Libby Amphibole by PLM Method 9002, Issue 2.

2.4 SOIL AND TRACK DISPOSAL

Soil potentially containing Libby amphibole was placed in dump trucks for transport to the Lincoln County Landfill. A canvas tarpaulin was placed over the load and secured during truck transit to and from the landfill. Water was applied frequently to control dust during the excavation and loading of soil potentially containing Libby amphibole, and workers onsite used proper respiratory and dermal protection. Equipment operators involved with loading asbestos-containing soil onto trucks were equipped with Level C personal protective equipment (PPE) and personal monitoring equipment. All trucks and equipment leaving the exclusion zone (EZ) were decontaminated over the truck decontamination pad at the eastern end of the Site. Truck cabs were equipped with a positive pressure ventilation system equipped with a high efficiency particulate air (HEPA) filter.

The rails, OTM, and ties were decontaminated and recycled or disposed as described in Section 2.1. Decontaminated rails and OTM were salvaged for recycling, and decontaminated ties will be disposed at the Montana Waste Systems Landfill in Great Falls, Montana.

2.5 HEALTH AND SAFETY

Site health and safety requirements were identified in EMR's July 2004 Health and Safety Plan. Kennedy/Jenks Consultants and the Contractor developed and followed their own Health and Safety Plans based on the EMR plan. EMR acted as the primary Health and Safety observer, with additional periodic observation by BNSF. Response Action work was conducted within the EZ, which was demarcated with safety cones and caution tape, including a sign indicating that respirators and PPE were required prior to entrance. Site personnel were required to wear level C PPE inside the EZ at all times. A Contamination Reduction Zone (CRZ) established outside the EZ contained a three-stage decontamination trailer with clean room, shower, and equipment room. Site personnel were required to use the decontamination trailer upon entering and exiting the EZ. Equipment used inside the EZ was washed with a pressure washer prior to leaving the EZ. An existing decontamination pad was reconstructed with a weir to an excavation filled with sub-ballast material to prevent overflow water from leaving the decontamination pad. At the end of construction, the decontamination pad and overflow area were excavated and disposed in the asbestos cell of the Lincoln County Landfill.

2.6 AIR MONITORING

Prior to construction, background air samples were collected equidistant across the length of the yard. During construction, work was conducted in modified Level C PPE within an EZ that extended northward from a boundary 8.5 feet north of the main line track centerline to include the limits of the work area, which changed frequently. Ambient air samples were collected during Response Actions at five perimeter monitoring stations around each EZ (sometimes active work areas included more than one EZ) to verify that asbestos fibers did not migrate outside the EZ. Ambient air samples were submitted for analysis by the TEM Asbestos Schools Hazard Abatement Act (AHERA) Method. If airborne asbestos fibers were detected at a concentration greater than 0.01 fibers per cubic centimeter (f/cc), work practices were examined and altered upon receipt of the sample results. Ambient air samples were submitted to EMSL Laboratories for analysis after CDM personnel reviewed and verified the sample paperwork and; monitoring results are documented in Appendix D, Table D-3.

Personnel air monitoring was conducted on approximately 25% of the work force. Personal air samples were collected with a low volume battery pump from chosen personnel inside the EZ. These air samples were representative of a full 8-hour shift. An AIHA-certified analyst with EMR analyzed the majority of the personnel monitoring samples onsite using the NIOSH 7400 PCM Method. When an AIHA-certified analyst was not present onsite, personnel air samples were submitted to the EMSL laboratory in Libby, Montana for the same analysis. If an air sample inside the EZ exceeded 0.1 f/cc, the sample was submitted to EMSL for analysis by the TEM AHERA Method. Initial respiratory protection inside the EZ consisted of full-face positive-pressure air-purifying respirators (PAPR) equipped with high-efficiency particulate air (HEPA) filters. Based on the results of air monitoring during Site activities, respiratory protection was downgraded to half-face respirators after approval from the Certified Industrial Hygienist (CIH). Personal air monitoring results for samples analyzed by EMSL are documented in Appendix D, Tables D-3 and D-4.

2.7 SOIL AND RAILROAD TIE DISPOSAL CHARACTERIZATION

In anticipation of landfill disposal, Site soil samples were collected in October 2002 to characterize the soil for non-asbestos constituents. The results of this characterization sampling are reported in Appendix D, Table D-5. Samples were analyzed for gasoline-, diesel-, and lube oil-range hydrocarbons, eight metals by EPA 6010-Series Methods, and VOC by EPA Method 8260B. Detected compounds were within the ranges acceptable for landfill disposal.

Forty railroad ties were randomly selected and sampled for analysis by PLM methods to document decontamination procedures. Asbestos fibers were not detected in any samples. Sample results are reported in Appendix D, Table D-6.

2.8 REPORTING AND COORDINATION ACTIVITIES

EMR completed notification to the Montana State Department of Environmental Quality (MDEQ) Solid Waste division in accordance with the AOC. Prior to beginning work, Envirocon provided a courtesy notification to EPA and MDEQ in accordance with National Emission Standards for Hazardous Air Pollutants (NESHAPS) 40CFR 61, Sub-part M. EMR submitted daily reports and sampling logs to Kennedy/Jenks Consultants at the end of the workday, including air monitoring tests and results, daily safety reports, and soil removal reports. EMR prepared weekly and monthly progress reports for submittal to EPA.

2.9 FINAL SITE RESTORATION

The finished grade and sub-grade for the rail beds and cap material were in accordance with the design drawings and RFIs. A surveyor licensed in the State of Montana established the final elevations.

3.0 CONSTRUCTION QUALITY ASSURANCE

The following sections provide brief descriptions of the Construction Quality Assurance (CQA) activities completed for the project. Kennedy/Jenks Consultants, EMR, HKM, Envirocon, and EPA representatives performed CQA daily throughout the project.

3.1 EARTHWORK

Earthwork quality assurance requirements outlined in *The Burlington Northern and Santa Fe Railway Company Libby Yard Asbestiform Fiber Removal Project Manual* (July 2004) were followed for soil density tests, gradation analyses, and dust control.

Sub-ballast material placed for the reconstructed rail beds was compacted to 95% compaction by ASTM D1557 modified proctor density. Compaction testing was performed by an approved testing firm (HKM Engineering of Butte, Montana) at random intervals but not less than every 100 feet along the length of the yard. Density tests were performed onsite with a nuclear density gage to determine the in-place density of compacted soil. Geotechnical soil analyses (gradations, proctor) were performed offsite to verify material conformance with project specifications. Compaction testing results are provided in Appendix E-1.

3.2 CONSTRUCTION MATERIALS VERIFICATION

Submittals for project materials, including sub-ballast, geotextile fabric, and fence materials were received and approved prior to installation (Appendix E-2). Upon delivery to the Site, the material was visually examined by the contractors and Kennedy/Jenks Consultants to assure conformance with the specifications. Material tags, invoices, and delivery tickets were obtained onsite as further verification that the material met specifications. Material verification documentation is enclosed in Appendix E-2.

3.3 CAP PLACEMENT

The sub-ballast cap material was supplied by Remp Sand and Gravel, a local source acceptable to BNSF and EPA (Remp Sand and Gravel). The sub-ballast was placed in 12- to 24-inch lifts and compacted with a vibratory compactor. Backfill thickness beneath Zones 1 and 2/3 was verified by before and after survey data. Backfill thickness for Zones 5 and 8 and cap thickness for Zone 4/6/7 were verified by measurement at the cap front during placement of sub-ballast and bulldozing, as well as by survey data. Compaction was tested as described in Section 3.1.

4.0 QUANTITIES OF MATERIALS

The total quantities of materials are summarized in Table 1. The quantities are based on the following:

- Removed rail was measured with a measuring wheel prior to removal.
- Following decontamination, removed ties were counted while they were stacked, prior to loading into railcars for future disposal.
- Soil and other potential ACM transported to the Lincoln County Landfill for incorporation in the asbestos cell was weighed on a certified truck scale at the Site. Documentation of the amount of material taken to the landfill asbestos cell is provided in Appendix F.
- Imported sub-ballast from Remp Sand and Gravel was weighed on a certified truck scale at the Site prior to placement. Documentation of the amount of clean imported fill is provided in Appendix G.

5.0 CONSTRUCTION COMPLETION INSPECTION

A final construction inspection was conducted on 11 November 2004. The Site inspection included personnel from EPA and its contractors, Montana Department of Environmental Quality, BNSF, Kennedy/Jenks Consultants, and Envirocon. No deficiencies were identified during this final inspection.

6.0 ARAR ANALYSIS

Compliance with applicable or relevant and appropriate requirements (ARARs) is documented in Appendix H.

REFERENCES

EMR, Incorporated. 2004a. Project Specification, BNSF Libby Railyard Hydrated Biotite Removal, Libby, Montana. Prepared for BNSF by EMR, Incorporated. July 2004.

EMR, Incorporated. 2004b. Volume III, Health and Safety Plan, BNSF Libby Railyard Libby Amphibole Impacted Soil Removal, Libby, Montana. Prepared for BNSF by EMR, Incorporated. July 2004.

Kennedy/Jenks Consultants. 2004a. Evaluation of Conceptual Response Options. Prepared for BNSF by Kennedy/Jenks Consultants. June 2004.

Kennedy/Jenks Consultants. 2004b. Project Manual, The Burlington Northern and Santa Fe Railway Company, Libby Rail Yard Asbestiform Fiber Removal, Libby, Montana. Prepared for BNSF by Kennedy/Jenks Consultants. July 2004.

Kennedy/Jenks Consultants. 2004c. Burlington Northern and Santa Fe Railway Company, Libby Railyard, Response Action (Design Drawings). Prepared for BNSF by Kennedy/Jenks Consultants. 26 July 2004.

Kennedy/Jenks Consultants. 2004d. Revised Response Action Work Plan, Libby Railyard, Libby, Montana. Prepared for BNSF by Kennedy/Jenks Consultants. August 2004.

United States Environmental Protection Agency, Region VIII. 2003. Administrative Order on Consent for Removal Action, In the Matter of: The Burlington Northern and Santa Fe Railway Company – Libby Railyard, Montana, Libby Asbestos Site, Libby, Montana. Prepared by United States Environmental Protection Agency. Signed by The Burlington Northern and Santa Fe Railway Company on 17 April 2003.

100

TABLE 1

QUANTITIES OF MATERIALS
THE BURLINGTON NORTHERN AND SANTA FE RAILWAY COMPANY
LIBBY YARD RESPONSE ACTION 2004
LIBBY, MONTANA

Item	Quantity	Units	Comments
Rail and other track materials	28,182	linear feet	Recycled by Montana Railroad Services (14,091 track-feet)
Railroad ties	8,000	each	Pending disposal at Montana Waste Systems Landfill, Great Falls, Montana
Potentially impacted soil	12,859.38	tons	Disposed at asbestos cell of Lincoln County Landfill, Montana (Appendix F)
Clean imported backfill	17,792.31	tons	Remp Sand and Gravel (Appendix G)

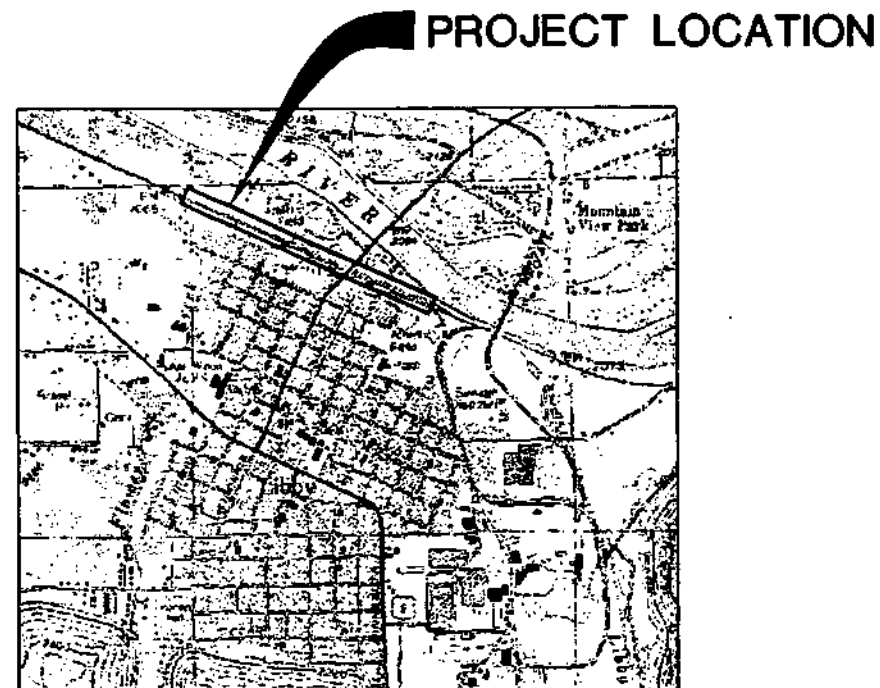
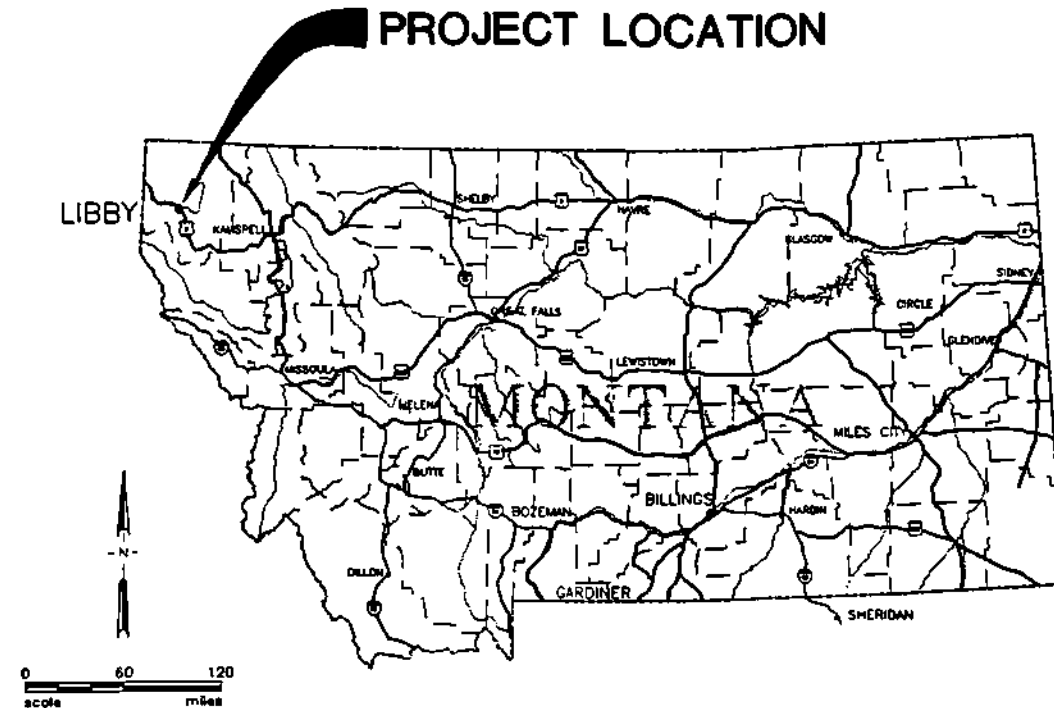
Appendix A

Construction Drawings

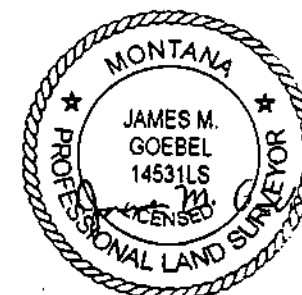
Appendix A-1

Record Drawings

RECORD DRAWINGS **for the** **LIBBY RAILYARD.** **BURLINGTON NORTHERN** **& SANTA FE RAILWAY COMPANY** **in** **LIBBY, MONTANA**



Prepared for :
KENNEDY/JENKS CONSULTANTS



HKM Engineering Inc.
 1015 S. Montana St.
 P.O. Box 3588
 Butte, MT 59702
 (406) 723-8213
 FAX (406) 723-8328

PROJECT NO. 15B638.102 DECEMBER 2004

LIBBY RESPONSE ACTION AREA SUMMARY

ZONE 1 EXCAVATION AND BACKFILL
(1.5' SOIL BACKFILL WITH FABRIC) = 0.9263 ACRES

ZONE 2 & 3 EXCAVATION AND BACKFILL (WEST PORTION)
(1.0' SOIL BACKFILL WITH FABRIC) = 0.0544 ACRES

ZONE 2 & 3 EXCAVATION AND BACKFILL (EAST PORTION)
(1.0' SOIL BACKFILL WITH FABRIC) = 1.7705 ACRES

ZONE 4, 6, & 7 CAP (WEST PORTION)
(1.0' SOIL CAP WITH FABRIC) = 0.3754 ACRES

ZONE 4, 6, & 7 CAP (EAST PORTION)
(1.0' SOIL CAP WITH FABRIC) = 2.6194 ACRES

ZONE 5 EXCAVATION AND BACKFILL (WEST PORTION)
(0.5' SOIL BACKFILL, NO FABRIC) = 0.0103 ACRES

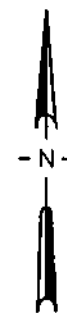
ZONE 5 EXCAVATION AND BACKFILL (EAST PORTION)
(0.5' SOIL BACKFILL, NO FABRIC) = 0.2190 ACRES

ZONE 8 EXCAVATION AND BACKFILL (WEST PORTION)
(1.0' SOIL BACKFILL, NO FABRIC) = 0.0907 ACRES

ZONE 8 EXCAVATION AND BACKFILL (EAST PORTION)
(1.0' SOIL BACKFILL, NO FABRIC) = 0.0233 ACRES

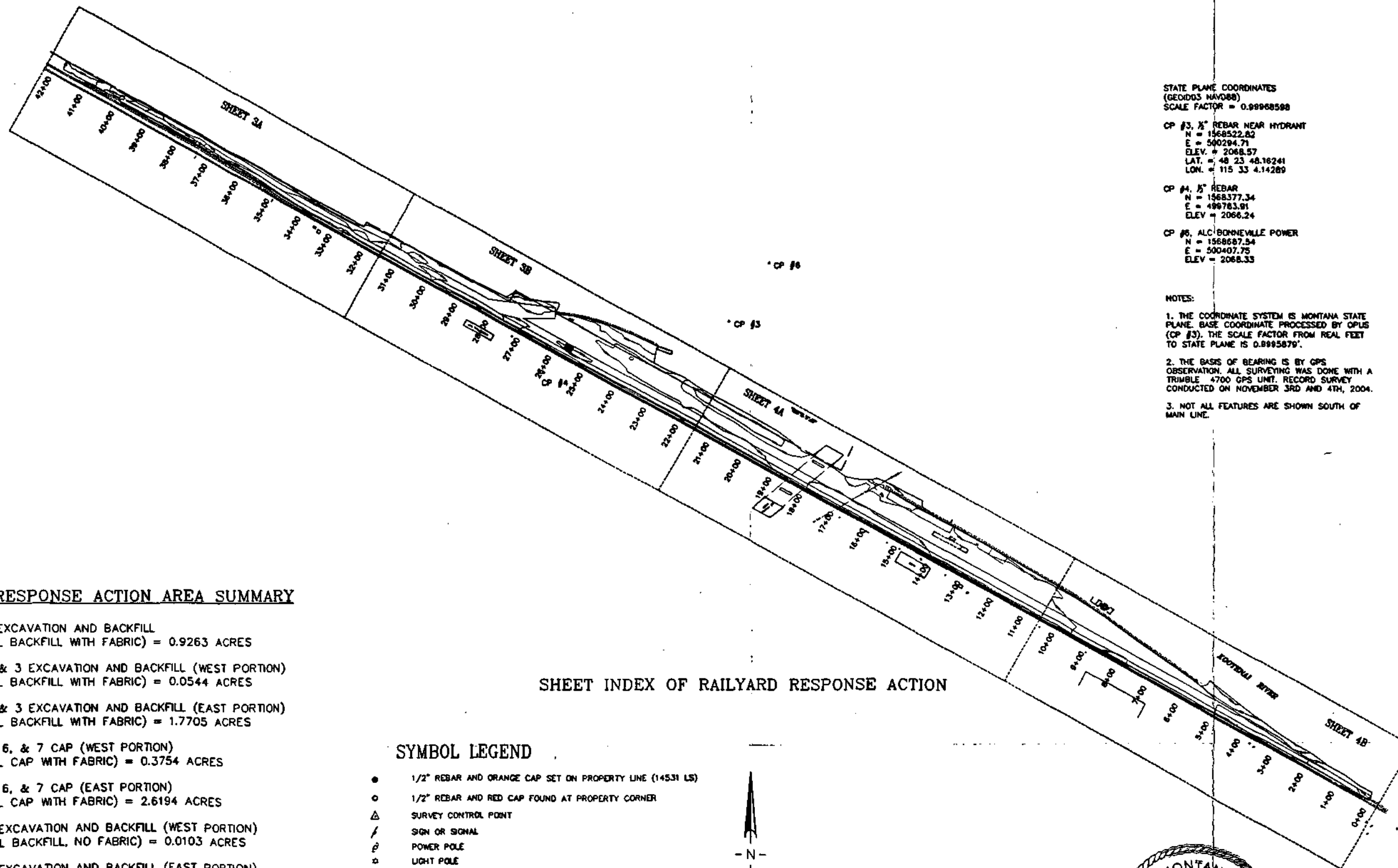
SYMBOL LEGEND

- 1/2" REBAR AND ORANGE CAP SET ON PROPERTY LINE (14531 LS)
- 1/2" REBAR AND RED CAP FOUND AT PROPERTY CORNER
- △ SURVEY CONTROL POINT
- / SIGN OR SIGNAL
- ⊙ POWER POLE
- ⊙ LIGHT POLE
- ⊙ WATER SPIGOT
- ⊙ MONITORING WELL
- PROPERTY LINE
- - - FENCE
- - - SURVEY PERIMETER
- ELEC— OVERHEAD ELECTRIC



SCALE: 1"=150'

SHEET INDEX OF RAILYARD RESPONSE ACTION



STATE PLANE COORDINATES
(GEODIG NAVD83)
SCALE FACTOR = 0.99988588

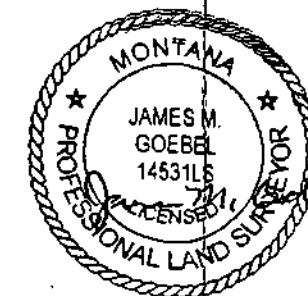
CP #3, 1/2" REBAR NEAR HYDRANT
N = 1568522.82
E = 540294.71
ELEV. = 2068.57
LAT. = 48 23 48.16241
LON. = 115 33 4.14280

CP #4, 1/2" REBAR
N = 1568377.34
E = 496783.91
ELEV. = 2066.24

CP #6, ALC BONNEVILLE POWER
N = 1568687.54
E = 500407.75
ELEV. = 2068.33

NOTES:

1. THE COORDINATE SYSTEM IS MONTANA STATE PLANE. BASE COORDINATE PROCESSED BY OPUS (CP #3). THE SCALE FACTOR FROM REAL FEET TO STATE PLANE IS 0.99988588.
2. THE BASIS OF BEARING IS BY GPS OBSERVATION. ALL SURVEYING WAS DONE WITH A TRIMBLE 4700 GPS UNIT. RECORD SURVEY CONDUCTED ON NOVEMBER 3RD AND 4TH, 2004.
3. NOT ALL FEATURES ARE SHOWN SOUTH OF MAIN LINE.



Project No. 158638.102		libby-SPC-sheets.dwg		Date	November 2004	Checked	JMG	Approved	EJ
LIBBY RAILYARD		BURLINGTON NORTHERN & SANTA FE RAILWAY		RESPONSE ACTION INDEX		RECORD DRAWINGS			
No.	Revision	By	Date						

RECORD
DRAWINGS

HKM Engineering Inc.
1015 S. Montana St.
P.O. Box 3588
Butte, MT 59702
(406) 723-8213
FAX (406) 723-8328



Sheet No.

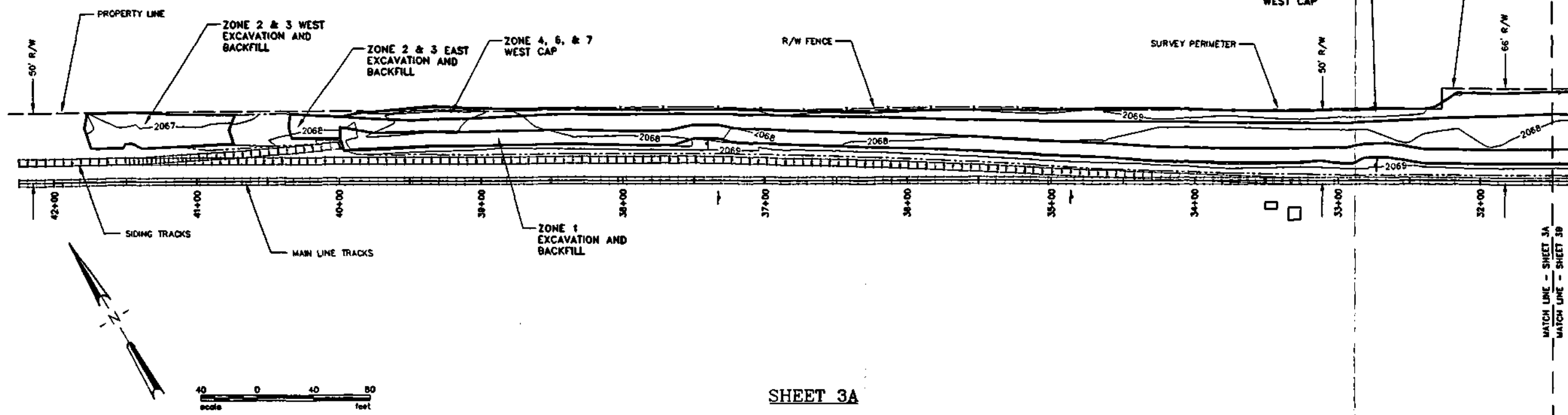
2

of 4

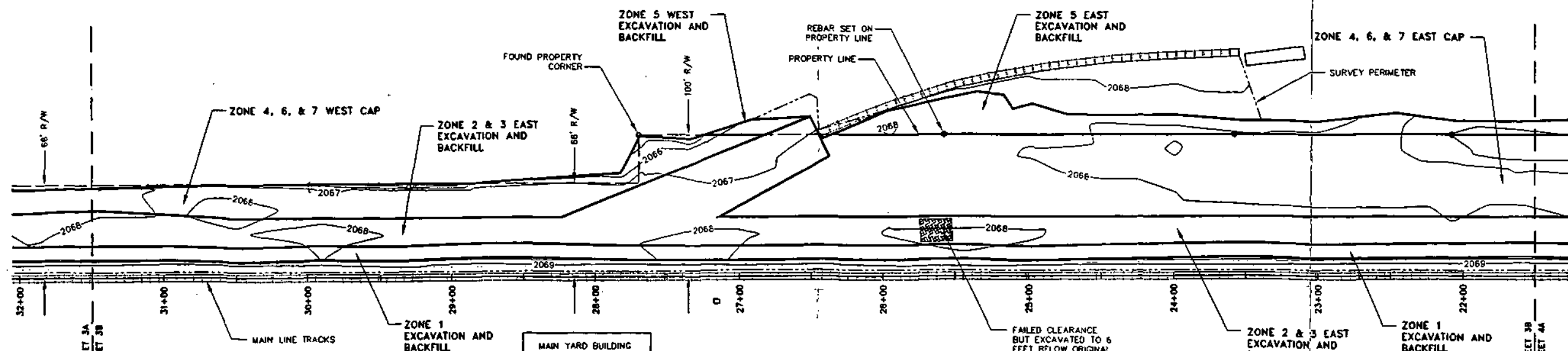
LIBBY RESPONSE ACTION AREA SUMMARY 3A

ZONE 2 & 3 EXCAVATION AND BACKFILL (WEST PORTION)
(1.0' SOIL BACKFILL WITH FABRIC) = 0.0544 ACRES

ZONE 2 & 3 EXCAVATION AND BACKFILL (EAST PORTION)
(1.0' SOIL BACKFILL WITH FABRIC) = 1.7705 ACRES



SHEET 3A



LIBBY RESPONSE ACTION AREA SUMMARY 3B

ZONE 1 EXCAVATION AND BACKFILL
(1.5' SOIL BACKFILL WITH FABRIC) = 0.9263 ACRES

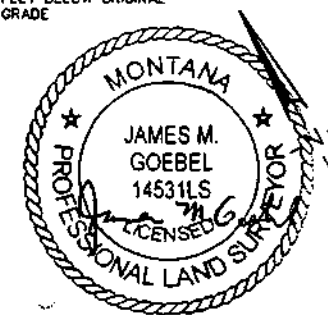
ZONE 4, 6, & 7 CAP (WEST PORTION)
(1.0' SOIL CAP WITH FABRIC) = 0.3754 ACRES

ZONE 4, 6, & 7 CAP (EAST PORTION)
(1.0' SOIL CAP WITH FABRIC) = 2.6194 ACRES

ZONE 5 EXCAVATION AND BACKFILL (WEST PORTION)
(0.5' SOIL BACKFILL, NO FABRIC) = 0.0103 ACRES

ZONE 5 EXCAVATION AND BACKFILL (EAST PORTION)
(0.5' SOIL BACKFILL, NO FABRIC) = 0.2190 ACRES

SHEET 3B



No.	Revision	By	Date

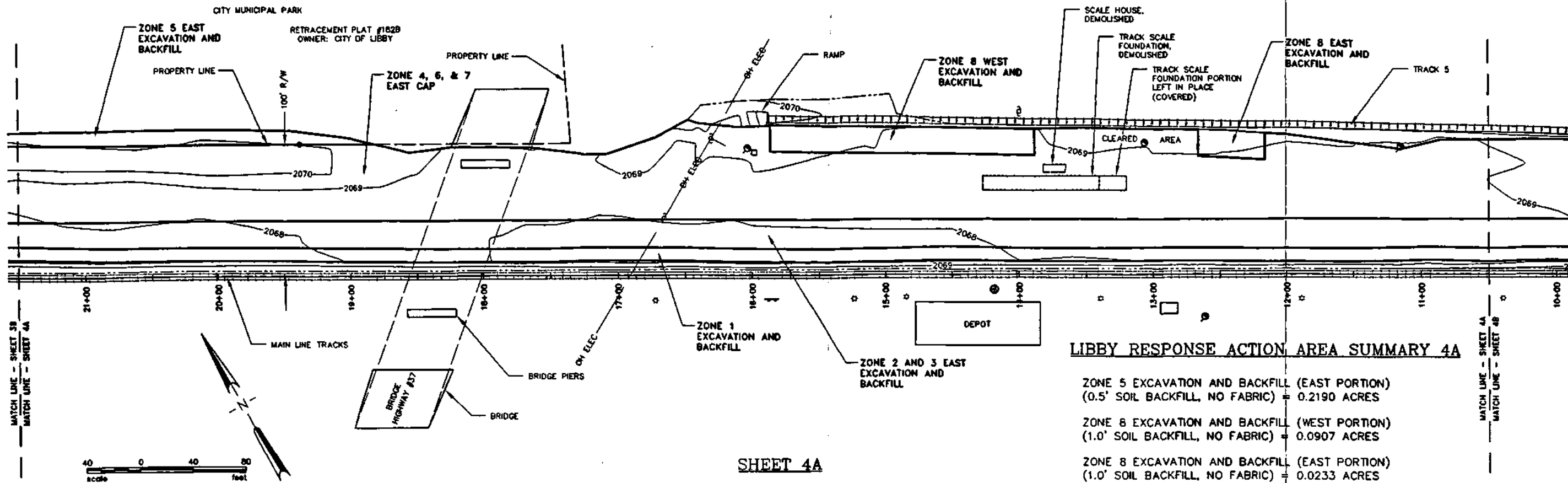
WARNING: THIS DRAWING IS NOT TO SCALE

LIBBY RAILYARD
BURLINGTON NORTHERN & SANTA FE RAILWAY
RESPONSE ACTION AREAS
RECORD DRAWINGS

HKM Engineering Inc.
1015 S. Montana St.
P.O. Box 3588
Butte, MT 59702
(406) 723-8213
FAX (406) 723-8328



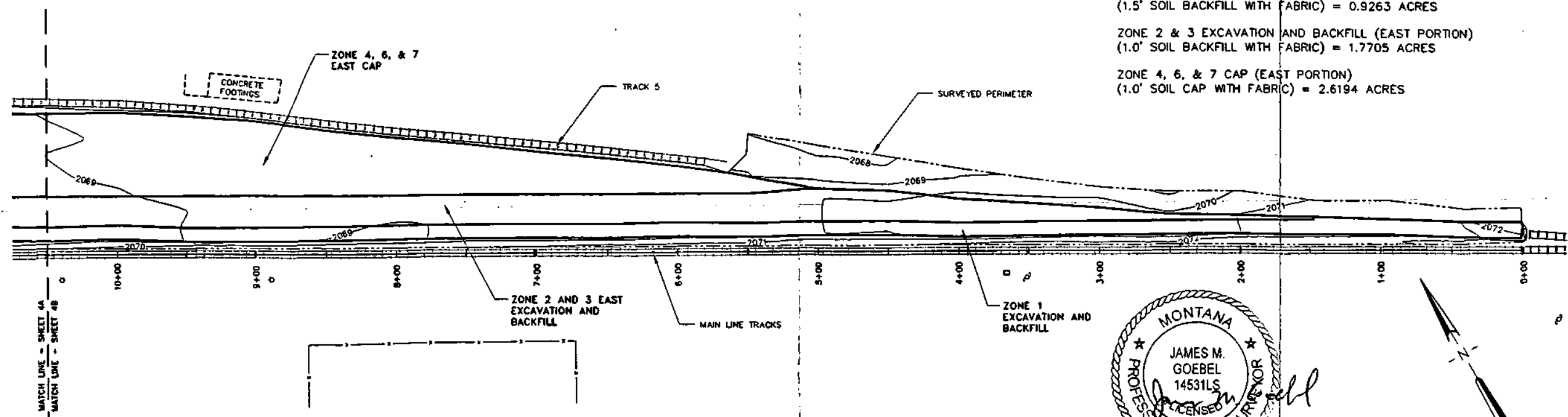
Sheet No. 3



SHEET 4A

LIBBY RESPONSE ACTION AREA SUMMARY 4A

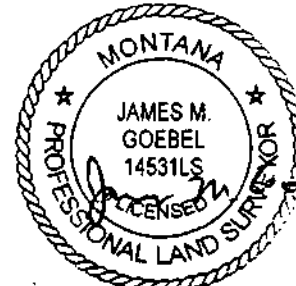
- ZONE 5 EXCAVATION AND BACKFILL (EAST PORTION)
(0.5' SOIL BACKFILL, NO FABRIC) = 0.2190 ACRES
- ZONE 8 EXCAVATION AND BACKFILL (WEST PORTION)
(1.0' SOIL BACKFILL, NO FABRIC) = 0.0907 ACRES
- ZONE 8 EXCAVATION AND BACKFILL (EAST PORTION)
(1.0' SOIL BACKFILL, NO FABRIC) = 0.0233 ACRES



SHEET 4B

LIBBY RESPONSE ACTION AREA SUMMARY 4B

- ZONE 1 EXCAVATION AND BACKFILL
(1.5' SOIL BACKFILL WITH FABRIC) = 0.9263 ACRES
- ZONE 2 & 3 EXCAVATION AND BACKFILL (EAST PORTION)
(1.0' SOIL BACKFILL WITH FABRIC) = 1.7705 ACRES
- ZONE 4, 6, & 7 CAP (EAST PORTION)
(1.0' SOIL CAP WITH FABRIC) = 2.6194 ACRES



Project No. 158638.102

libby-SPC-sheets.dwg

November 2004

Drawn JMG

Checked JMG

Approved EJ

Date

Revision

By

LIBBY RAILYARD

BURLINGTON NORTHERN & SANTA FE RAILWAY

RESPONSE ACTION AREAS

RECORD DRAWINGS

HKM Engineering Inc.

1015 S. Montana St.

P.O. Box 3588

Butte, MT 59702

(406) 723-8213

FAX (406) 723-8328

Sheet No.

4

Copyright © 2004 HKM Engineering Inc., All Rights Reserved.

Appendix A-2

Construction Design Drawings

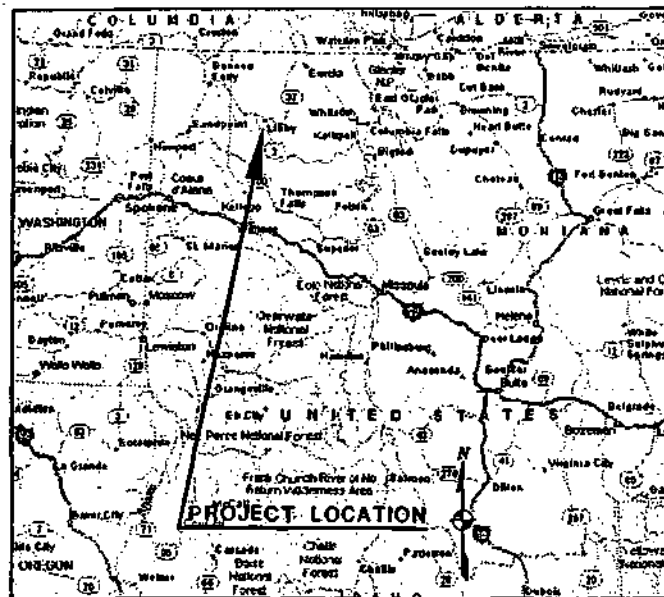
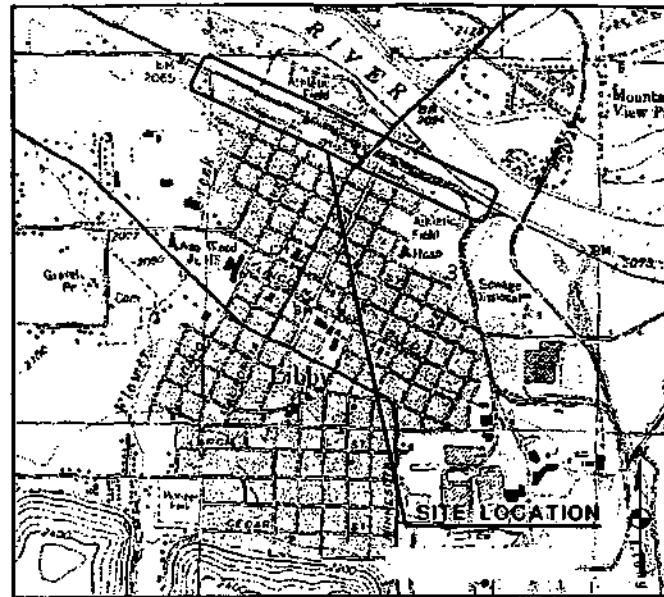
BURLINGTON NORTHERN & SANTA FE RAILWAY COMPANY

LIBBY RAILYARD

RESPONSE ACTION

BY

KENNEDY/JENKS CONSULTANTS



LIBBY MONTANA VICINITY MAPS

LIST OF DRAWINGS

GENERAL:

DWG NO.	TITLE
G-1	TITLE SHEET
G-2	ABBREVIATIONS
G-3	CIVIL/GENERAL SYMBOLS
G-4	SITE PHOTOS
G-5	SITE PHOTOS
G-6	SITE PHOTOS

DEMOLITION

DWG NO.	TITLE
D-1	RAILROAD TRACK DEMOLITION SHEET 1
D-2	RAILROAD TRACK DEMOLITION SHEET 2
D-3	RAILROAD TRACK DEMOLITION SHEET 3
D-4	RAILROAD TRACK DEMOLITION SHEET 4
D-5	RAILROAD TRACK DEMOLITION SHEET 5
D-6	RAILROAD TIE DEMOLITION SHEET 1
D-7	RAILROAD TIE DEMOLITION SHEET 2
D-8	RAILROAD TIE DEMOLITION SHEET 3
D-9	RAILROAD TIE DEMOLITION SHEET 4
D-10	RAILROAD TIE DEMOLITION SHEET 5

CIVIL

DWG NO.	TITLE
C-1	EXISTING SITE PLAN
C-2	EXCAVATION ZONE SHEET 1
C-3	EXCAVATION ZONE SHEET 2
C-4	EXCAVATION ZONE SHEET 3
C-5	EXCAVATION ZONE SHEET 4
C-6	EXCAVATION ZONE SHEET 5
C-7	NOT USED
C-8	NOT USED
C-9	NOT USED
C-10	NOT USED
C-11	NOT USED
C-20	NOT USED
C-21	NOT USED
C-22	TYPICAL SECTIONS EAST AND WEST OF THE HIGHWAY BRIDGE

Richard C. Guglione
 MONTANA
 RICHARD C. GUGLIONE
 No. 9406
 PROFESSIONAL ENGINEER
 EXPIRES - 6/30/2008
 SIGNED - 7/26/2004

NO.	DATE	DESCRIPTION OF REVISIONS

SCALE BAR
 0 1" = 25.4mm
 IF THIS BAR IS NOT
 DIMENSIONED SHOWN
 ADJUST SCALES ACCORDINGLY

ENGR. C. SOULE
 DRWR. D. ROTH
 CHECKED R. GUGLIONE
 BNSF APPROVAL
 BY: DATE:

Kennedy/Jenks Consultants
 Engineers & Scientists
 32001 32nd Ave. S, Suite 100
 Federal Way, Washington
 98001



The Burlington Northern and
 Santa Fe Railway Company
 LIBBY RAILYARD
 RESPONSE ACTION
 LIBBY, MONTANA

TITLE SHEET

BID
 ISSUE
 JULY, 2004
 DRAWING NUMBER
G-1
 OF

AND
AT
BY
CENTERLINE
CHANNEL
DEGREES FAHRENHEIT
DIAMETER
FEET
INCHES
NUMBER, POUND
PROPERTY LINE
SQUARE
STRUCTURAL ANGLE

EXPIRES - 6/30/2006
SIGNED - 7/26/2004

F:\CAD\04\046022.11-Libby\G-02.dwg Jul 26, 2004 - 10:45am

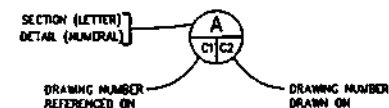
CIVIL/GENERAL SYMBOLS

FIRE PROTECTION WATER (EXISTING)	FW	FW
SEWER (EXISTING)	SS	SS
STORM DRAIN (EXISTING)	SD	SD
WATER LINE (EXISTING)	W	W
RECLAIMED WATER (EXISTING)	RV	RV
GAS LINE (EXISTING)	G	G
TELEPHONE LINE (EXISTING)	T	T
ELECTRICAL LINE (EXISTING)	E	E
CABLE TV (EXISTING)	CTV	CTV
CROSSING UTILITIES (EXISTING)		
FENCE		
PROPERTY LINE/RIGHT-OF-WAY		
CONTRACTORS WORK AREA LIMITS	VA	VA
CENTERLINE		
CULVERT WITH END SECTIONS		
HANDRAIL OR GUARDRAIL		
WATER SURFACE		
GRADE CHANGE LINE		
RISE LINE	R	R
FLOW LINE		
GRADED SLOPE		
DITCH OR SWALE		
CONTOUR MAJOR (NEW)	110	
CONTOUR MINOR (NEW)		
CONTOUR MAJOR (EXIST)	110	
CONTOUR MINOR (EXIST)		

CONTROL POINT	CP
SOIL BORING, IDENTIFICATION NUMBER	B-10
SOIL TEST PIT, IDENTIFICATION NUMBER	TP-10
SPOT ELEVATION	10.35
ELECTROLYSIS TEST STATION	ETS
WATER METER	WM
FIRE DEPT. CONNECTION	
FIRE HYDRANT	
UTILITY BOX (AS LABELED)	
POWER POLE	
STREET LIGHT	
STREET LIGHT AND TRAFFIC SIGNAL	
YARD LIGHT	
TRAFFIC SIGNAL	
TELEPHONE RISER	TRISER
GUY ANCHOR	
CATCH BASIN	CB
DROP INLET	
CLEAN OUT	CO
DRIVEWAY	
HANDICAP ACCESS RAMP	
CURVE NO.	14
SURVEY PANEL	
MONUMENT OR SURVEY POINT	
SECTION CORNER	
ELEVATION MARK (REFERENCE)	
ELEVATION MARK (DESIGN)	
FLAG NOTE	

STRUCTURE OR PIPE (NEW)	
STRUCTURE OR PIPE	
DEMOLITION	
CONCRETE IN SECTION	
STEEL IN SECTION	
WOOD IN SECTION	
GRATING IN PLAN	
CHECKERED PLATE IN PLAN	
GRAVELED AREA IN PLAN OR SECTION	
SAND	
BRICK OR CONCRETE BLOCK IN SECTION	
GRADE	
FILL	
ASPHALT CONCRETE (IN PLAN)	
ASPHALT CONCRETE (IN SECTION)	
TRACK DEMOLITION HATCH	
TRAIL DEMOLITION HATCH	
EXCAVATION ZONE 1/2/3	
EXCAVATION ZONE 4	
EXCAVATION ZONE 5	
EXCAVATION ZONE 6	

SECTION OR DETAIL REFERENCE



- NOTES:
1. THIS IS A GENERALIZED LEGEND SHEET. THIS CONTRACT MAY NOT USE ALL INFORMATION SHOWN.
 2. INFORMATION SHOWN MAY NOT BE ALL INCLUSIVE. SEE ALSO ABBREVIATIONS, G2.

MONTANA
RICHARD C. GUGLIONE
Professional Engineer
EXPIRES - 6/30/2006
SIGNED - 7/26/2004

NO.	DATE	DESCRIPTION OF REVISIONS

SCALE BAR:
0 1"
0 25.4mm
IF THIS BAR IS NOT
DIMENSION SHOWN,
ADJUST SCALES ACCORDINGLY

ENGR. C. SOULE
DRWN: D. ROTH
CHKD: R. GUGLIONE
BNSF APPROVAL
BY: DATE:

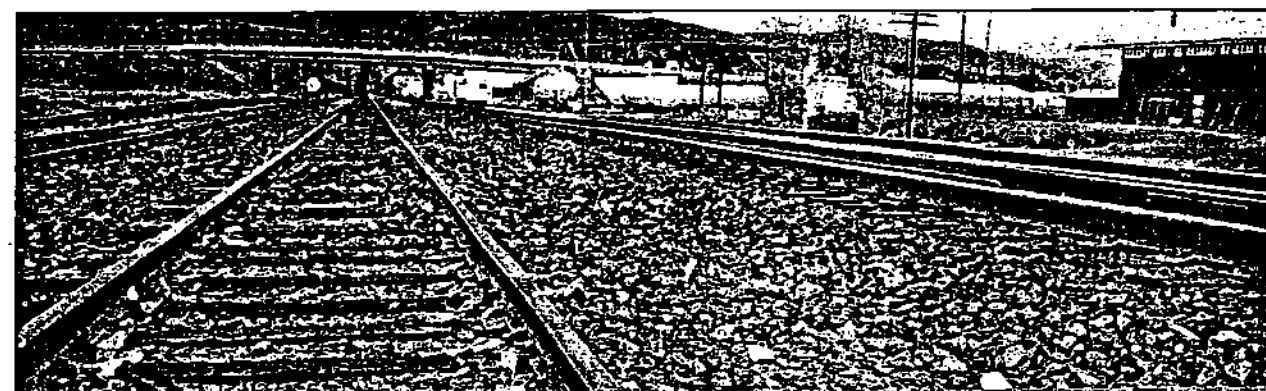
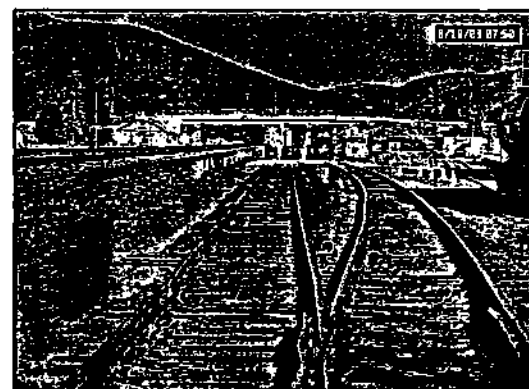
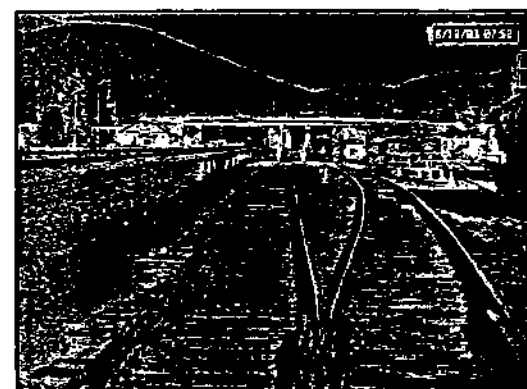
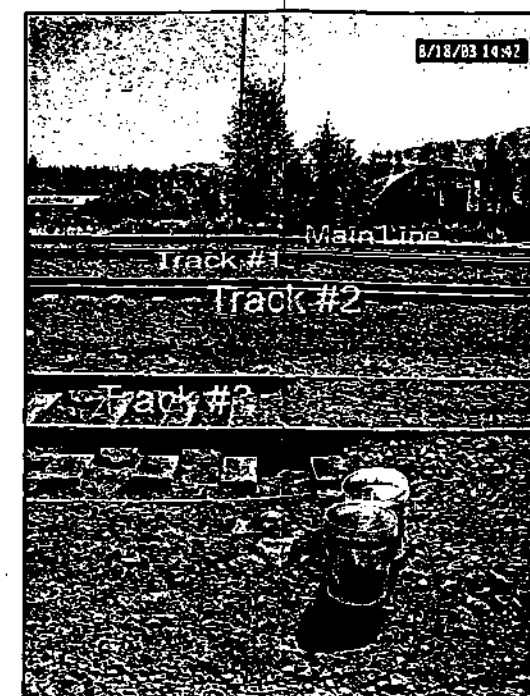
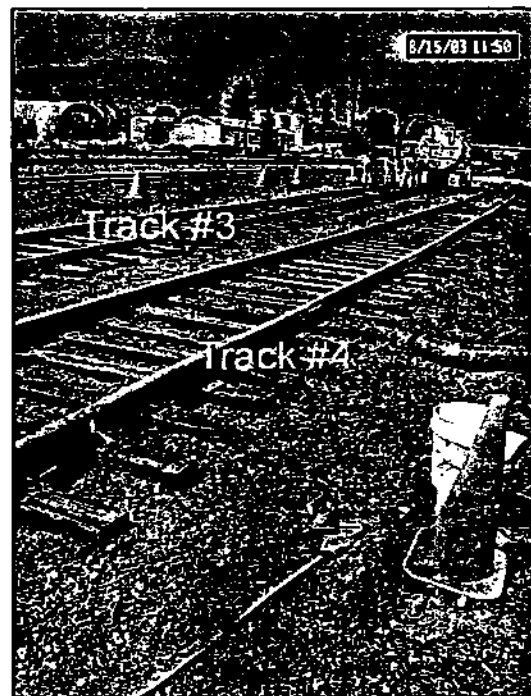
Kennedy/Jenks Consultants
Engineers & Scientists
32001 32nd Ave. S, Suite 100
Federal Way, Washington
98001



The Burlington Northern and
Santa Fe Railway Company
LIBBY RAILYARD
RESPONSE ACTION
LIBBY, MONTANA

CIVIL/GENERAL SYMBOLS

BID
ISSUE
JULY, 2004
DRAWING NUMBER
G-3
OF



MONTANA
 RICHARD C. GUGLIONE
 No. 100PE
 PROFESSIONAL ENGINEER
Richard C. Guglione
 EXPIRES - 6/30/2006
 SIGNED - 7/26/2004

NO.	DATE	DESCRIPTION OF REVISIONS

SCALE BAR:
 0 1"
 0 25.4mm
 IF THIS BAR IS NOT
 DIMENSION SHOWN,
 ADJUST SCALES ACCORDINGLY

ENGR. C. SOULE
 GWINE D. ROTH
 CHIEF R. GUGLIONE
 BNSF APPROVAL
 BY: _____ DATE: _____

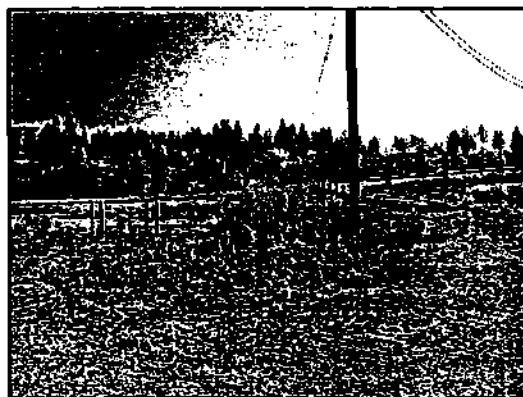
Kennedy/Jenks Consultants
 Engineers & Scientists
 32001 32nd Ave. S, Suite 100
 Federal Way, Washington 98001



The Burlington Northern and Santa Fe Railway Company
 LIBBY RAILYARD
 RESPONSE ACTION
 LIBBY, MONTANA

SITE PHOTOS

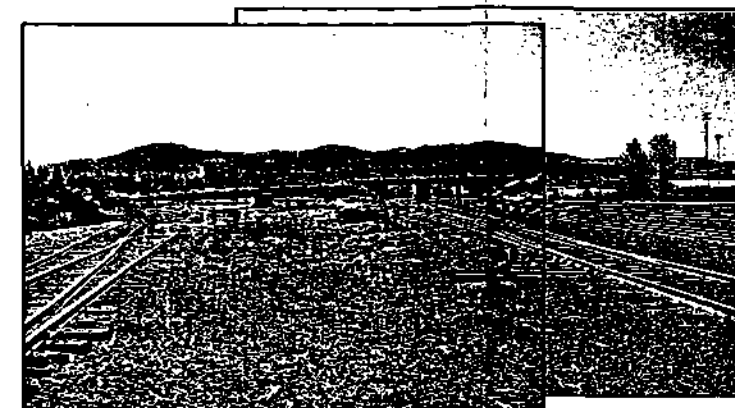
BID
 ISSUE
 JULY, 2004
 DRAWING NUMBER
G-4



LOCATION OF WATER HYDRANT



SPUR INTO WR GRACE SITE



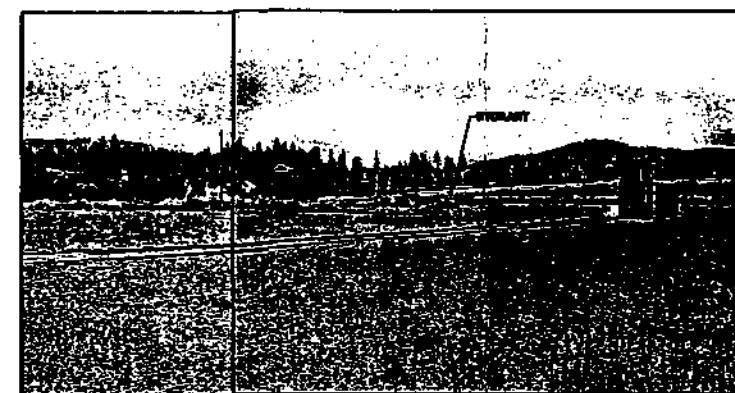
LOOKING WEST AT WR GRACE SITE



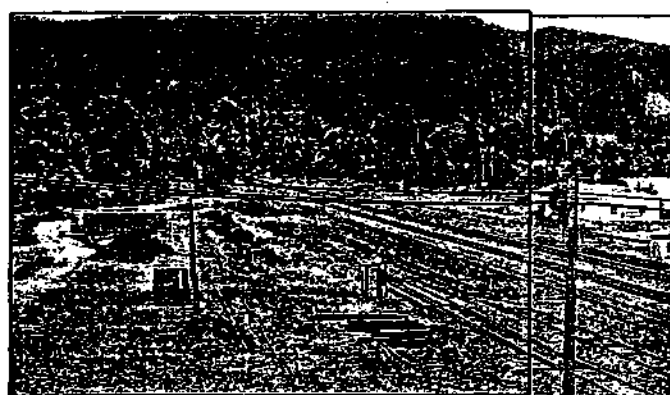
LOOKING WEST FROM EAST OF HWY BRIDGE



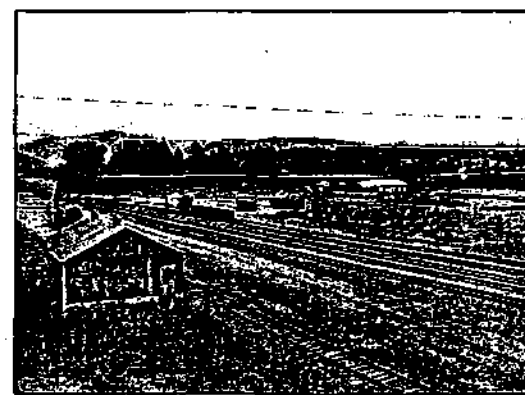
STAGING AREA LOOKING NE FROM SOUTH OF MAIN LINE



STAGING AREA, LOOKING NORTH EAST



NORTH SIDE OF HWY BRIDGE LOOKING EAST



STAGING AREA FROM SOUTH SIDE HWY BRIDGE



STAGING AREA FROM SOUTH SIDE HWY BRIDGE

EXPIRES - 6/30/2006

 SIGNED - 7/26/2004

NO.	DATE	DESCRIPTION OF REVISIONS

SCALE BAR:
 0 1" = 25.4mm
 IF THIS BAR IS NOT
 DIMENSION SHOWN,
 ADJUST SCALES ACCORDINGLY

ENGR: C. SOULE
 DRAWN: D. ROTH
 CHECK: R. GUGLIEMO
 BEST APPROX.
 BY: DATE:

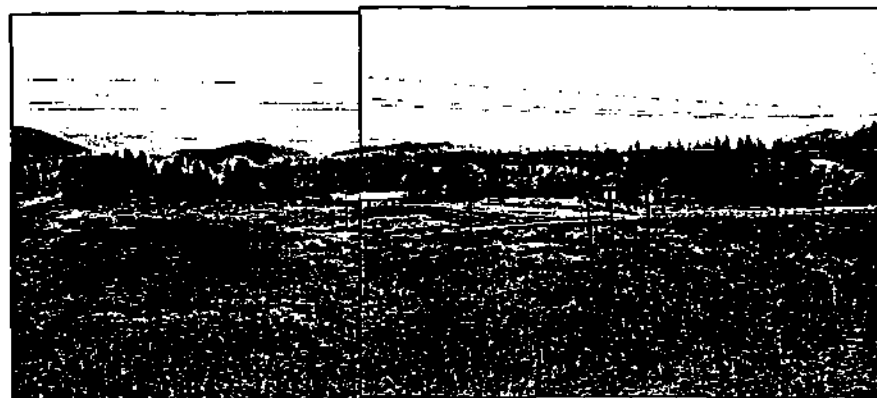
Kennedy/Jenks Consultants
 Engineers & Scientists
 32001 32nd Ave. S, Suite 100
 Federal Way, Washington
 98001



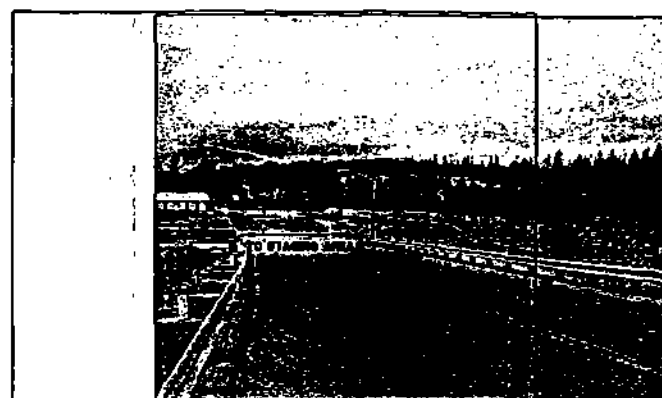
The Burlington Northern and Santa Fe Railway Company
 LIBBY RAILYARD
 RESPONSE ACTION
 LIBBY, MONTANA

SITE PHOTOS

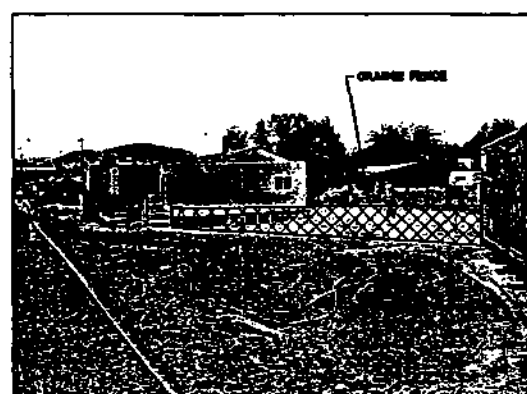
BID
 ISSUE
 JULY, 2004
 DRAWING NUMBER
G-5
 OF



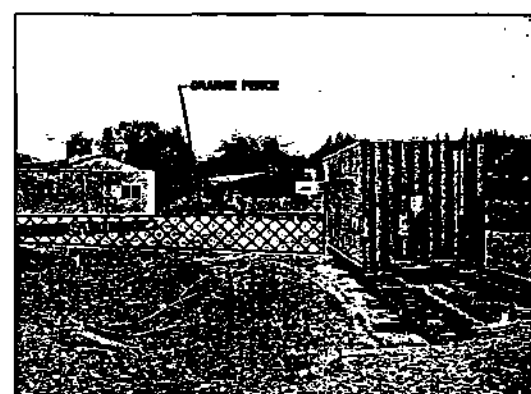
STAGING AREA LOOKING WEST FROM NORTH SIDE OF HWY BRIDGE



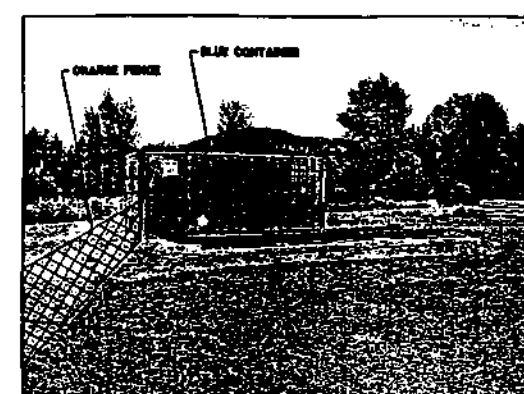
STAGING AREA




DECONTAMINATION TRAILER




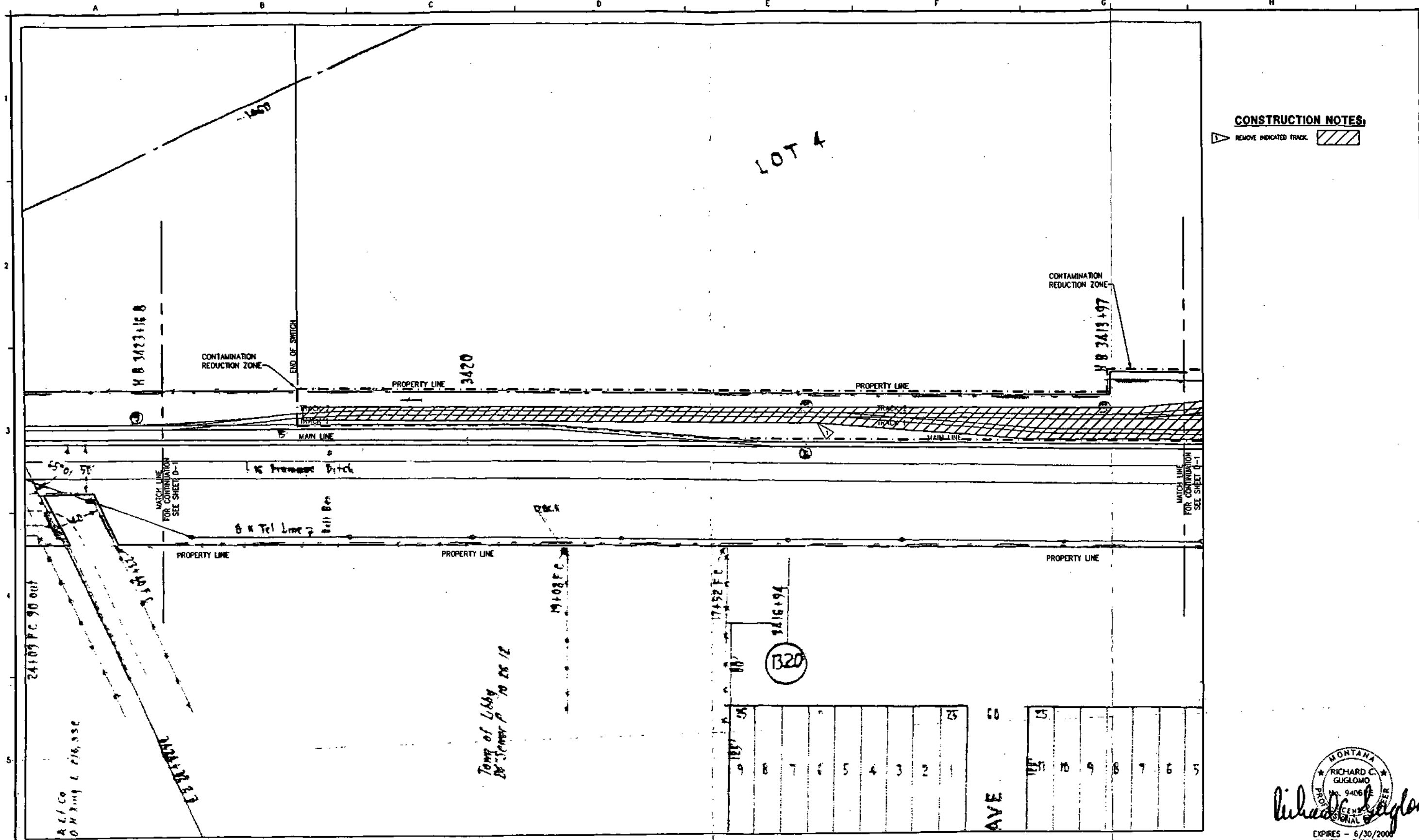
DECONTAMINATION TRAILER



EXISTING DECONTAMINATION PAD


 Richard C. Guglielmo
 EXPIRES - 6/30/2006
 SIGNED - 7/26/2004

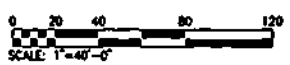
NO. DATE DESCRIPTION OF REVISIONS		SCALE BAR: 0 1" 0 25.4mm IF THIS BAR IS NOT DIMENSION SHOWN ADJUST SCALES ACCORDINGLY	ENGINEER: C. SOULE DRAWN: D. NOTH CHECKED: R. GUGLIELMO DESIGNED: R. GUGLIELMO BY: DATE:	Kennedy/Jenks Consultants Engineers & Scientists 32001 32nd Ave. S, Suite 100 Federal Way, Washington 98003	 The Burlington Northern and Santa Fe Railway Company LIBBY RAILYARD RESPONSE ACTION LIBBY, MONTANA	SITE PHOTOS	BID ISSUE JULY, 2004 DRAWING NUMBER G-6 OF
-----------------------------------	--	--	--	---	--	-------------	--



CONSTRUCTION NOTES:
 ▽ REMOVE INDICATED TRACK

PLAN
 SCALE: 1" = 40'

MONTANA
 RICHARD C. GUGLIONE
 No. 9406
 PROFESSIONAL ENGINEER
Richard C. Guglione
 EXPIRES - 6/30/2006
 SIGNED - 7/26/2004



NO.	DATE	DESCRIPTION OF REVISIONS

SCALE BAR
 0 1" 25.4mm
 IF THIS BAR IS NOT
 DIMENSION SHOWN,
 ADJUST SCALES ACCORDINGLY

ENGR. C. SOULE
 DRAW. D. BETH
 CHDR. R. GUGLIONE
 BNSF APPROVAL
 DATE: _____

Kennedy/Jenks Consultants
 Engineers & Scientists
 32001 32nd Ave. S, Suite 100
 Federal Way, Washington 98001



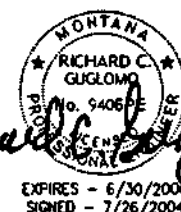
The Burlington Northern and Santa Fe Railway Company
 LIBBY RAILYARD
 RESPONSE ACTION
 LIBBY, MONTANA

**RAIL
 DEMOLITION
 SHEET 2**

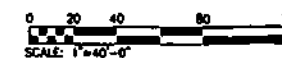
BID
 ISSUE
 JULY 2004
 DRAWING NUMBER
D-2
 OF


1 REMOVE INDICATED TRACK.

2 CHANGE IN BALLAST SIZE.



EXPIRES - 6/30/2004
SIGNED - 7/26/2004



		SCALE BAR 0 1" 0 25.4mm IF THIS BAR IS NOT DIMENSION SHOWN ADJUST SCALES ACCORDINGLY	DESIGNED BY: C. SOULE DRAWN BY: D. ROTH CHECKED BY: R. GUGLINO IN CHARGE: [] DATE:	Kennedy/Jenks Consultants Engineers & Scientists 32001 32nd Ave. S, Suite 100 Federal Way, Washington 98001	 The Burlington Northern and Santa Fe Railway Company LIBBY RAILYARD RESPONSE ACTION LIBBY, MONTANA	RAIL DEMOTION SHEET 5	BID ISSUE JULY, 2004 DRAWING NUMBER D-5 OF
NO.	DATE	DESCRIPTION OF REVISIONS					

LOT 8

3430+00 Rail Monuments

BRIDGE No 189-A
Span for Trestle

1223, 343
Mason's Disposal Service
50 Acres Roadway

FLOWER CREEK

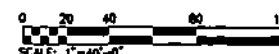
CONTAMINATION
REDUCTION ZONE

CONSTRUCTION NOTES:

REMOVE INDICATED TIES



Richard C. Guglielmo
EXPIRES - 6/30/2006
SIGNED - 7/26/2004



PLAN

SCALE: 1" = 40'



NO.	DATE	DESCRIPTION OF REVISIONS

SCALE BAR
0 1' 25.4mm
IF THIS BAR IS NOT
DIMENSION SHOWN
ADJUST SCALES ACCORDINGLY

ENGR. C. SOULE
DRWN. D. BISH
CHD. R. GUGLIOMO
BNSF APPROVAL
BY: _____ DATE: _____

Kennedy/Jenks Consultants
Engineers & Scientists
32001 32nd Ave. S, Suite 100
Federal Way, Washington 98001



The Burlington Northern and Santa Fe Railway Company
LIBBY RAILYARD
RESPONSE ACTION
LIBBY, MONTANA

RAILROAD TIE
DEMOLITION
SHEET 1

BID
ISSUE
JULY, 2004
DRAWING NUMBER
D-6
OF

LOT 3

SECTION 34 T. 31 N. R. 31 W
3, T. 30 N. R. 31 W

LOT 4

CONSTRUCTION NOTES:

REMOVE INDICATED TIES. 

CONTAMINATION
REDUCTION ZONE

CONTAMINATION
REDUCTION ZONE

PLAN

SCALE: 1" = 40'



Richard C. Guglomo
EXPIRES - 6/30/2006
SIGNED - 7/26/2004

0 20 40 60 80 100 120
SCALE: 1" = 40'-0"

NO.	DATE	DESCRIPTION OF REVISIONS

SCALE BAR
0 1" 25.4mm
IF THIS BAR IS NOT
DIMENSION SHOWN
ADJUST SCALES ACCORDINGLY

ENGR. C. SOULE
DRWN. D. ROTH
CHKD. R. GUGLOMO
BIST APPROVAL
BY: DATE:

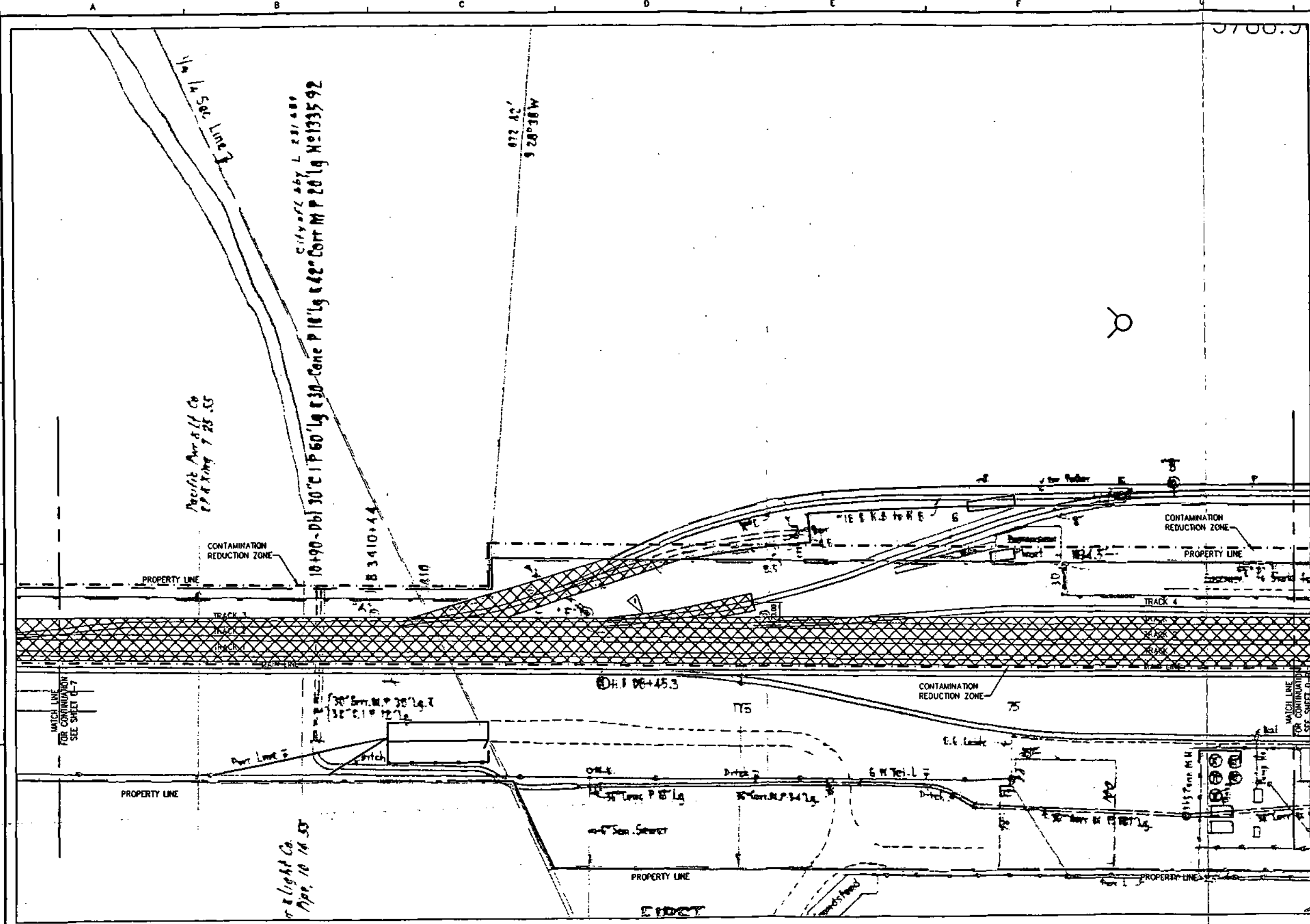
Kennedy/Jenks Consultants
Engineers & Scientists
32001 32nd Ave. S. Suite 100
Federal Way, Washington 98001



**The Burlington Northern and
Santa Fe Railway Company**
LIBBY RAILYARD
RESPONSE ACTION
LIBBY, MONTANA

RAILROAD TIE
DEMOLITION
SHEET 2

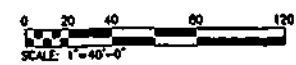
BID
ISSUE
JULY, 2004
DRAWING NUMBER
D-7
OF



CONSTRUCTION NOTES:
 REMOVE INDICATED TIES.

PLAN
 SCALE: 1" = 40'

Richard C. Guglielmo
 EXPIRES - 6/30/2004
 SIGNED - 7/26/2004



NO.	DATE	DESCRIPTION OF REVISIONS

SCALE BAR:
 0 1" 25.4mm
 IF THIS BAR IS NOT
 DIMENSION SHOWN,
 ADJUST SCALES ACCORDINGLY

ENGR: C. SOULE
 DWN: D. BETH
 CHD: R. GUGLIEMO
 BNSF APPROVAL
 BY: DATE:

Kennedy/Jenks Consultants
 Engineers & Scientists
 32001 32nd Ave. S, Suite 100
 Federal Way, Washington 98001

The Burlington Northern and Santa Fe Railway Company
 LIBBY RAILYARD
 RESPONSE ACTION
 LIBBY, MONTANA

**RAILROAD TIE
 DEMOLITION
 SHEET 3**

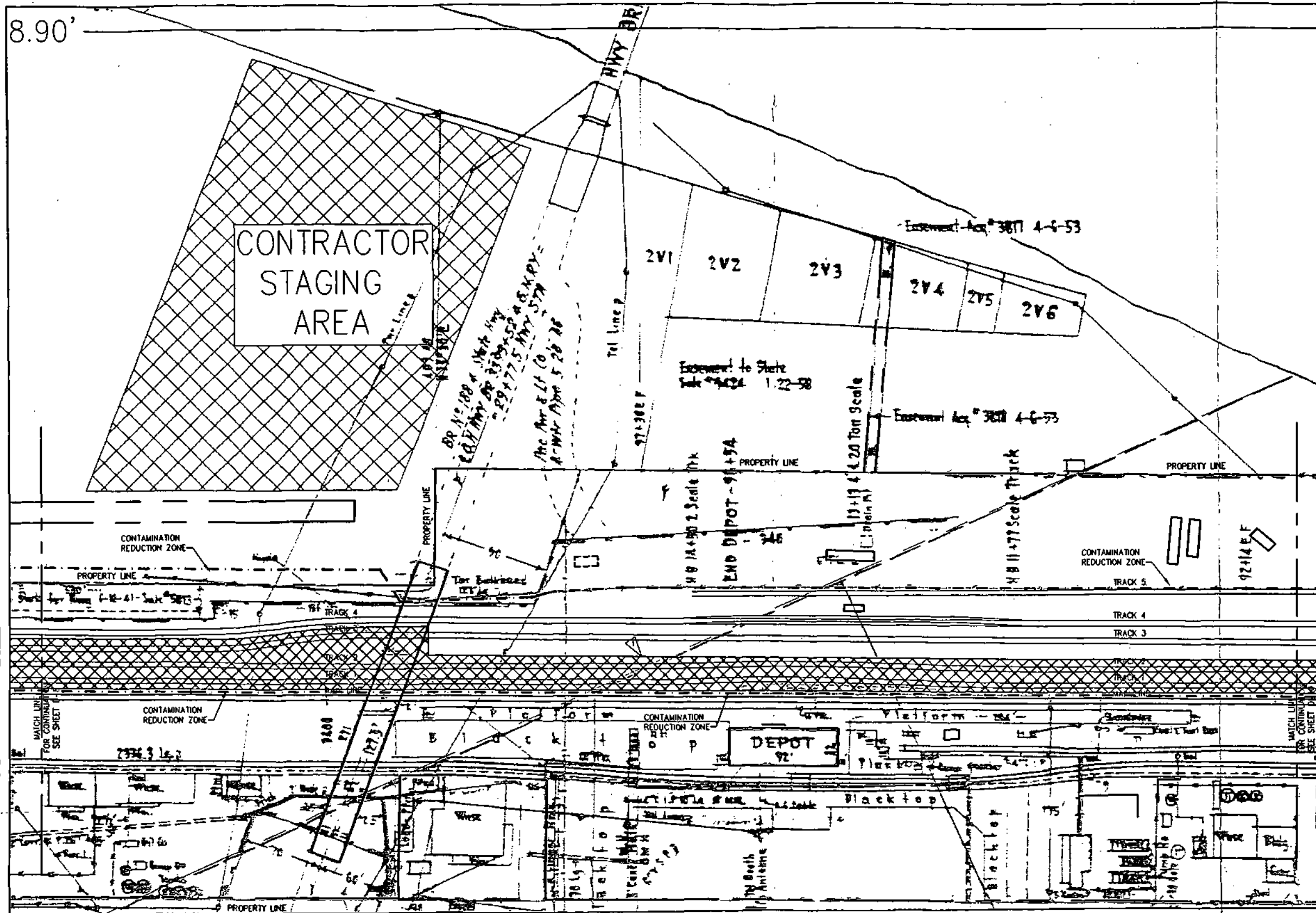
BID
 ISSUE
 JULY 2004
 DRAWING NUMBER
D-8
 OF

8.90'

CONTRACTOR
STAGING
AREA

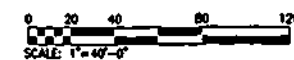
CONSTRUCTION NOTES

REMOVE INDICATED TIES



PLAN

SCALE: 1" = 40'



MONTANA
RICHARD C. GUGLIONE
No. 9408PE
EXPIRES - 6/30/2006
SIGNED - 7/26/2004

NO.	DATE	DESCRIPTION OF REVISIONS

SCALE BAR
0 1" = 25.4mm
IF THIS BAR IS NOT
DIMENSION SHOWN,
ADJUST SCALES ACCORDINGLY

ENGR. C. SOULE
DRW. D. BOTH
CHKD. R. GUGLIONE
BNSF APPROVAL
BY: DATE:

Kennedy/Jenks Consultants
Engineers & Scientists
32001 32nd Ave. S, Suite 100
Federal Way, Washington
98001



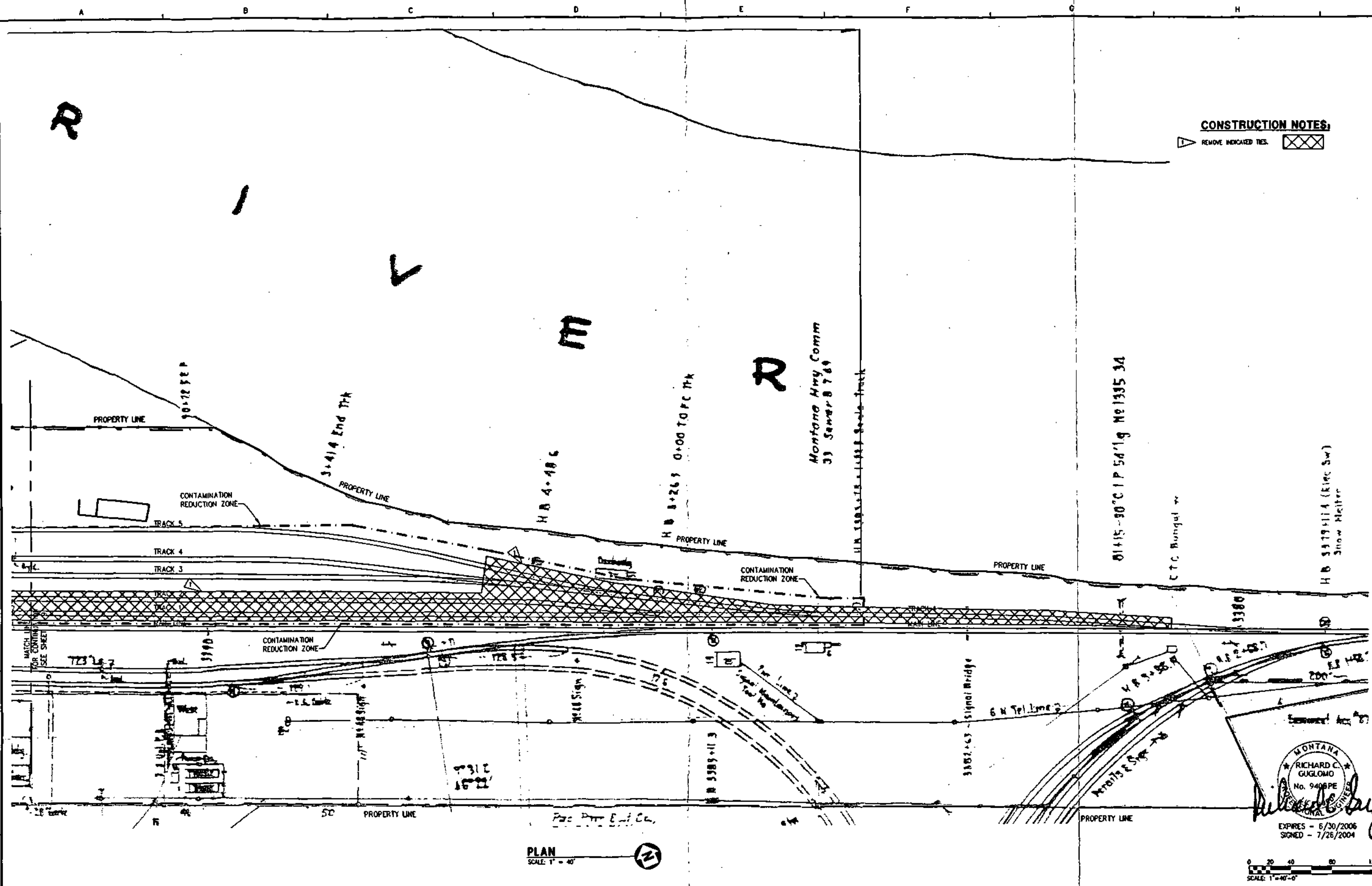
The Burlington Northern and
Santa Fe Railway Company
LIBBY RAILYARD
RESPONSE ACTION
LIBBY, MONTANA

RAILROAD TIE
DEMOLITION
SHEET 4

BID
ISSUE
JULY, 2004
DRAWING NUMBER
D-9

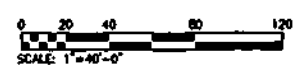
CONSTRUCTION NOTES:

△ REMOVE INDICATED TIES. 



PLAN
SCALE: 1" = 40'

MONTANA
RICHARD C. GUGLIONE
No. 9408 PE
EXPIRES - 6/30/2006
SIGNED - 7/26/2004



NO.	DATE	DESCRIPTION OF REVISIONS

SCALE BAR
0 1" 25.4mm
IF THIS BAR IS NOT
DIMENSION SHOWN,
ADJUST SCALES ACCORDINGLY

ENGR. C. SOULE
DRWN. D. ROTH
CHD. R. GUGLIONE
GWS APPROVAL
BY: DATE:

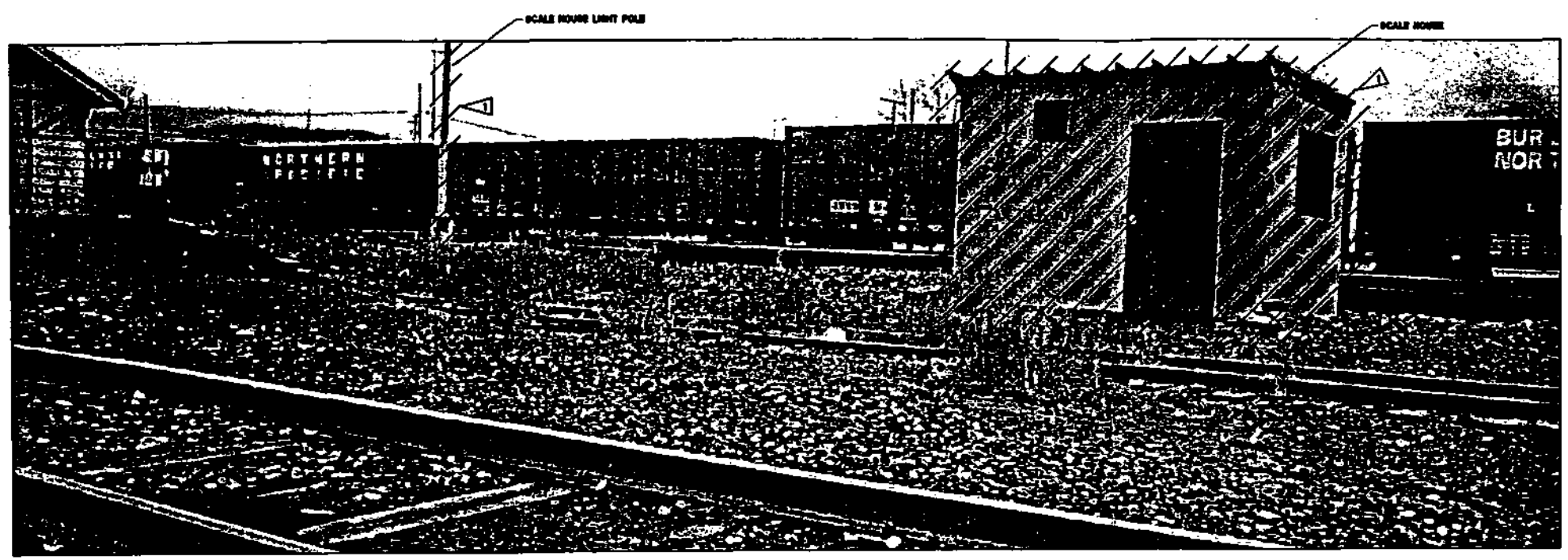
Kennedy/Jenks Consultants
Engineers & Scientists
32001 32nd Ave. S, Suite 100
Federal Way, Washington 98001



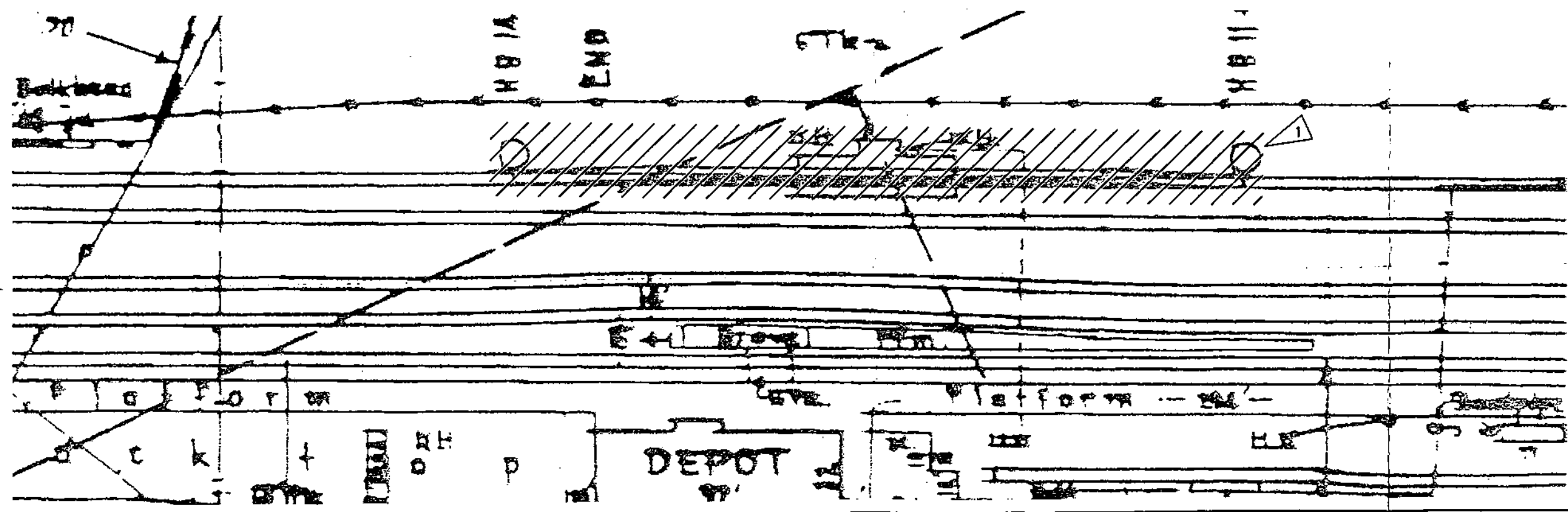
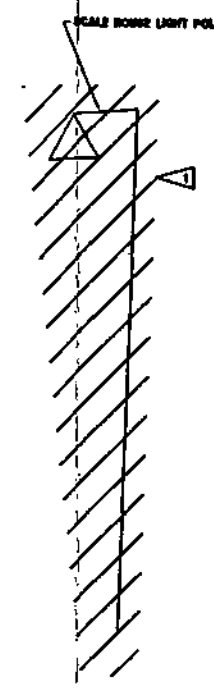
The Burlington Northern and Santa Fe Railway Company
LIBBY RAILYARD
RESPONSE ACTION
LIBBY, MONTANA

**RAILROAD TIE
DEMOLITION
SHEET 5**

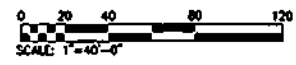
BID
ISSUE
JULY, 2004
DRAWING NUMBER
D-10



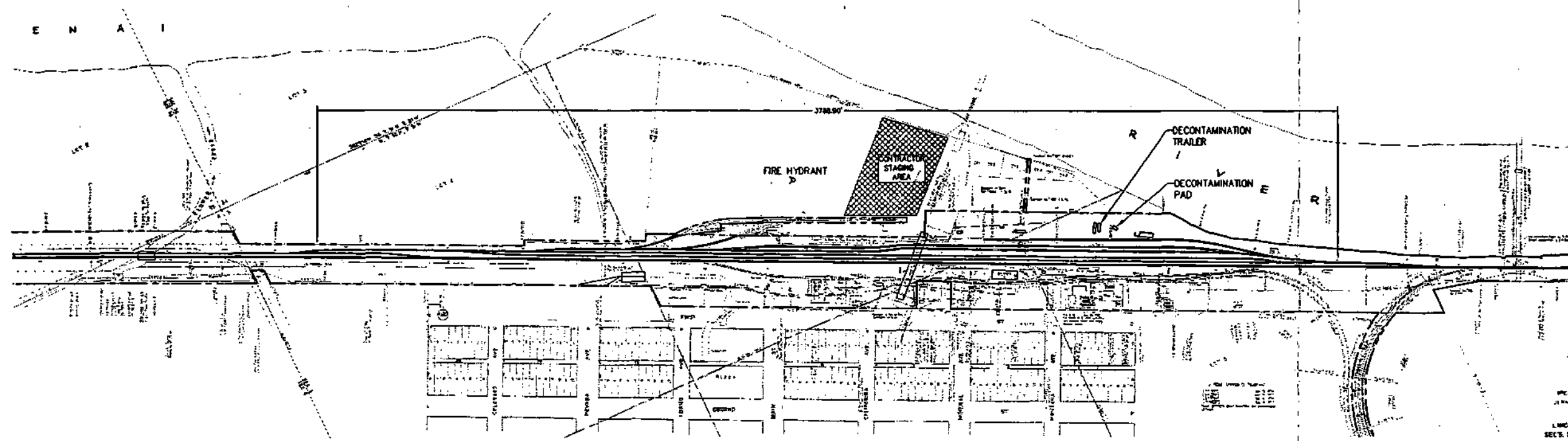
- CONSTRUCTION NOTES:**
- 1 DEMOLISH SCALE, SCALE HOUSE, AND LIGHT POLES.
 - 2 BNSF WILL DISCONNECT THE ELECTRICAL SERVICE TO THE SCALE HOUSE BUILDING. NOTIFY THE ENGINEER TO COORDINATE DISCONNECT WITH BNSF WHEN READY.



RICHARD C. GUGLIELMO
 No. 4086PE
 MONTANA
 EXPIRES - 6/30/2006
 SIGNED - 7/26/2004
Richard C. Guglielmo

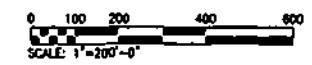



NO. DATE DESCRIPTION OF REVISIONS		SCALE BAR 0 1" 0 25.4mm IF THIS BAR IS NOT DIMENSION SHOWN, ADJUST SCALES ACCORDINGLY	ENGR. C. SOULE DRWN. D. ROTH CHCKD. R. GUGLIELMO BNSF APPROVAL BY: DATE:	Kennedy/Jenks Consultants Engineers & Scientists 32001 32nd Ave. S, Suite 100 Federal Way, Washington 98001	 The Burlington Northern and Santa Fe Railway Company LIBBY RAILYARD RESPONSE ACTION LIBBY, MONTANA	SCALE DEMOLITION SHEET	BID ISSUE JULY, 2004 DRAWING NUMBER D-11 OF
-----------------------------------	--	--	--	--	---	---------------------------	---

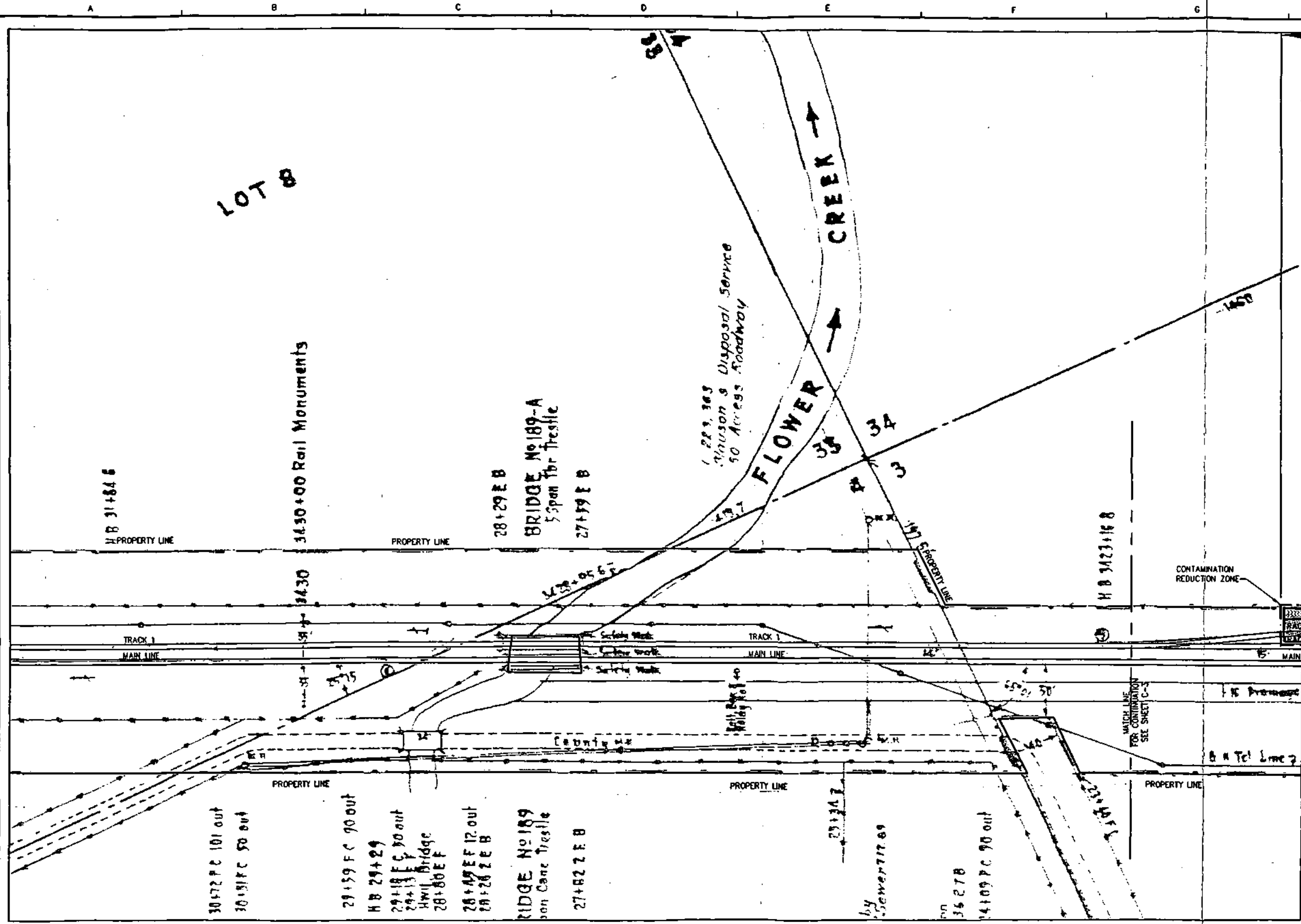


SITE PLAN
SCALE: 1"=200'

Richard C. Guglielmo
 MONTANA
 RICHARD C. GUGLIELMO
 No. 9408
 PROFESSIONAL ENGINEER
 EXPIRES - 6/30/2008
 SIGNED - 7/26/2004

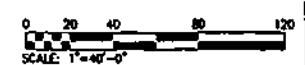


<table><tr><td>NO.</td><td>DATE</td><td>DESCRIPTION OF REVISIONS</td></tr><tr><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td></tr></table>			NO.	DATE	DESCRIPTION OF REVISIONS													<p>SCALE BAR: 0 1" 0 25.4mm IF THIS BAR IS NOT DIMENSION SHOWN, ADJUST SCALES ACCORDINGLY</p>	<p>ENGR: C. SOULE DRWN: D. ROTH CHKD: R. GUGLIELMO BNSF APPROVAL BY: _____ DATE: _____</p>	<p>Kennedy/Jenks Consultants Engineers & Scientists 32001 32nd Ave. S, Suite 100 Federal Way, Washington 98001</p>	 <p>The Burlington Northern and Santa Fe Railway Company LIBBY RAILYARD RESPONSE ACTION LIBBY, MONTANA</p>	<p>EXISTING SITE PLAN</p>	<p>BID ISSUE JULY, 2004 DRAWING NUMBER C-1 OF</p>
NO.	DATE	DESCRIPTION OF REVISIONS																					



PLAN
SCALE: 1" = 40'

RICHARD C. GUGLIELMO
 No. 9408PE
 PROFESSIONAL ENGINEER
 MONTANA
 EXPIRES - 6/30/2006
 SIGNED - 7/26/2004



NO.	DATE	DESCRIPTION OF REVISIONS

SCALE BAR: 0 1" = 25.4mm 0 25.4mm IF THIS BAR IS NOT DIMENSION SHOWN, ADJUST SCALES ACCORDINGLY	ENGR. C. SQULE DRAWN: D. ROTH CHECKED: R. GUGLIEMO BRIDGE APPROVAL DATE:
--	--

Kennedy/Jenks Consultants
 Engineers & Scientists
 32001 32nd Ave. S, Suite 100
 Federal Way, Washington 98001

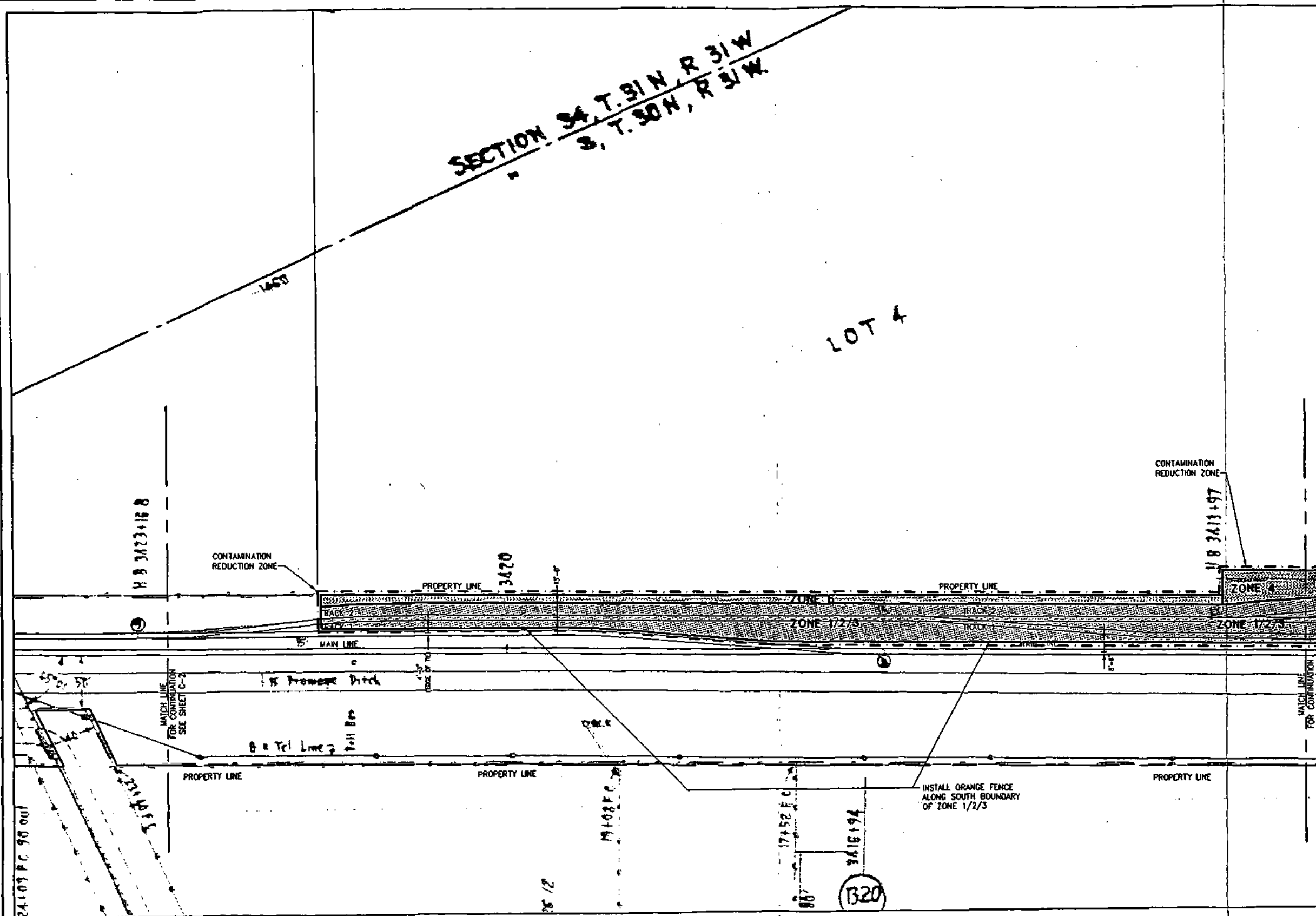
The Burlington Northern and Santa Fe Railway Company
 LIBBY RAILYARD
 RESPONSE ACTION
 LIBBY, MONTANA

EXCAVATION ZONE
SHEET 1

BID
 ISSUE
 JULY, 2004
 DRAWING NUMBER
C-2
 OF

SECTION 34 T. 91 N. R. 31 W
S. T. 90 N. R. 31 W

LOT 4



PLAN

SCALE: 1" = 40'



Richard C. Guglielmo
 MONTANA
 RICHARD C. GUGLIOMO
 No. 9406 PE
 LICENSED PROFESSIONAL ENGINEER
 EXPIRES - 6/30/2006
 SIGNED - 7/26/2004

0 20 40 80 120
 SCALE: 1" = 40'-0"

NO.	DATE	DESCRIPTION OF REVISIONS

SCALE BAR
 0 1" = 40'
 0 25.4mm
 IF THIS BAR IS NOT
 DIMENSION SHOWN
 ADJUST SCALES ACCORDINGLY

ENGR. C. SOULE
 DRAWN: D. ROTH
 CHECK: R. GUGLIOMO
 BNSF APPROVAL
 BY: _____ DATE: _____

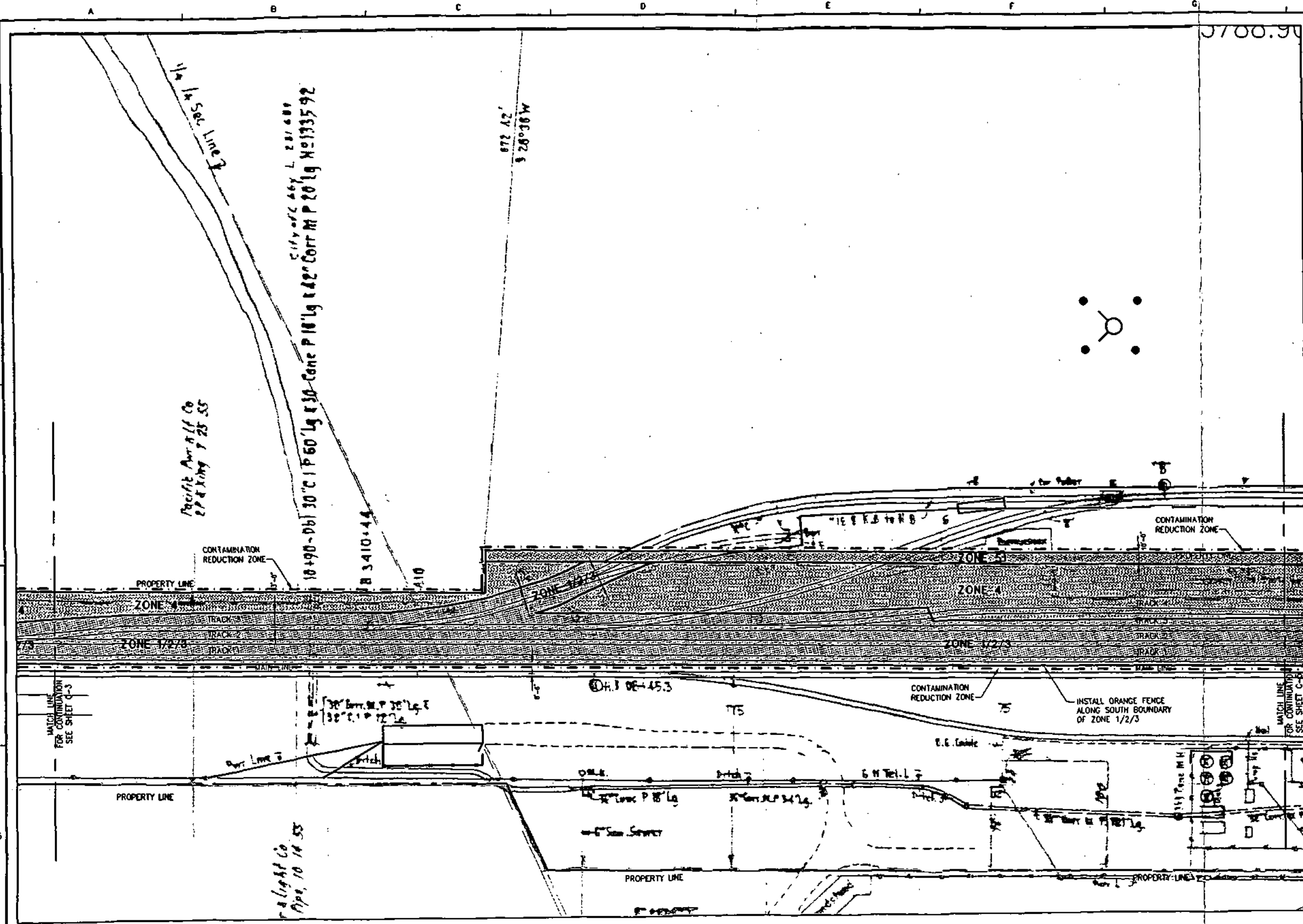
Kennedy/Jenks Consultants
 Engineers & Scientists
 32001 32nd Ave. S, Suite 100
 Federal Way, Washington 98001



The Burlington Northern and Santa Fe Railway Company
 LIBBY RAILYARD
 RESPONSE ACTION
 LIBBY, MONTANA

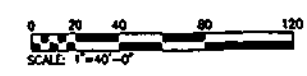
EXCAVATION ZONE
 SHEET 2

BID
 ISSUE
 MAY, 2004
 DRAWING NUMBER
C-3



PLAN
SCALE: 1" = 40'

Richard C. Guglielmo
 MONTANA
 RICHARD C. GUGLIEMO
 No. 9406PE
 LICENSED PROFESSIONAL ENGINEER
 EXPIRES - 6/30/2006
 SIGNED - 7/26/2004



NO.	DATE	DESCRIPTION OF REVISIONS

SCALE BAR:
 0 1"
 0 25.4mm
 IF THIS BAR IS NOT
 DIMENSION SHOWN,
 ADJUST SCALES ACCORDINGLY

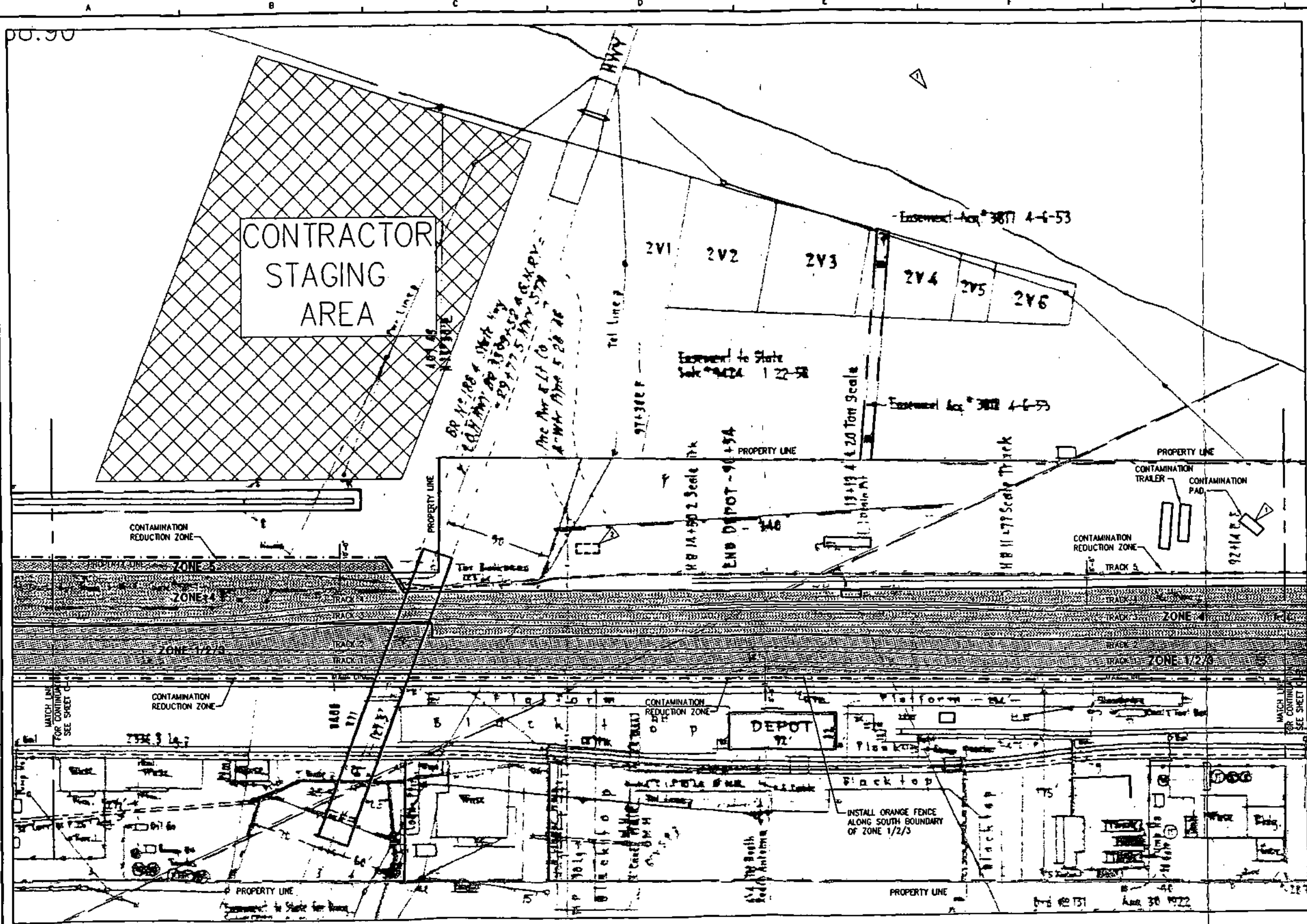
ENGR. C. SOULE
 DRAWN: D. BETH
 CHECK: R. GUGLIEMO
 BEST APPROVAL
 BY: _____ DATE: _____

Kennedy/Jenks Consultants
 Engineers & Scientists
 32001 32nd Ave. S, Suite 100
 Federal Way, Washington 98001

The Burlington Northern and Santa Fe Railway Company
 LIBBY RAILYARD
 RESPONSE ACTION
 LIBBY, MONTANA

**EXCAVATION ZONE
 SHEET 3**

BID
 ISSUE
 JULY 2004
 DRAWING NUMBER
C-4



CONSTRUCTION NOTES:

- △ MOVE EXISTING BLUE CONTAINER TO LOCATION
- ▽ NEW LOCATION OF EXISTING BLUE CONTAINER

PLAN
SCALE: 1" = 40'

Richard C. Guglielmo
 MONTANA
 RICHARD C. GUGLIEMO
 No. 9406
 PROFESSIONAL
 EXPIRES - 6/30/2006
 SIGNED - 7/26/2004

0 20 40 80 120
 SCALE: 1"=40'-0"

NO.	DATE	DESCRIPTION OF REVISIONS

SCALE BAR
 0 1" 25.4mm
 IF THIS BAR IS NOT
 DIMENSION SHOWN
 AGAINST SCALES ACCORDINGLY

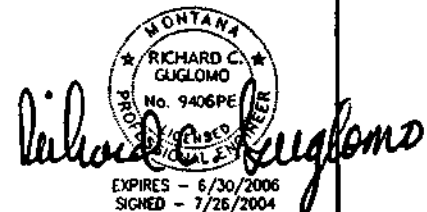
CHRG: C. SOALE
 DRWN: D. BOTH
 CHRG: R. GUGLIEMO
 BEST APPROVAL
 DATE:

Kennedy/Jenks Consultants
 Engineers & Scientists
 32001 32nd Ave. S, Suite 100
 Federal Way, Washington
 98001

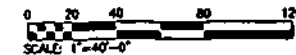
**The Burlington Northern and
 Santa Fe Railway Company**
 LIBBY RAILYARD
 RESPONSE ACTION
 LIBBY, MONTANA

**EXCAVATION ZONE
 SHEET 4**

810
 ISSUE
 JULY 2004
 DRAWING NUMBER
C-5
 OF



EXPIRES - 6/30/2006
SIGNED - 7/26/2004

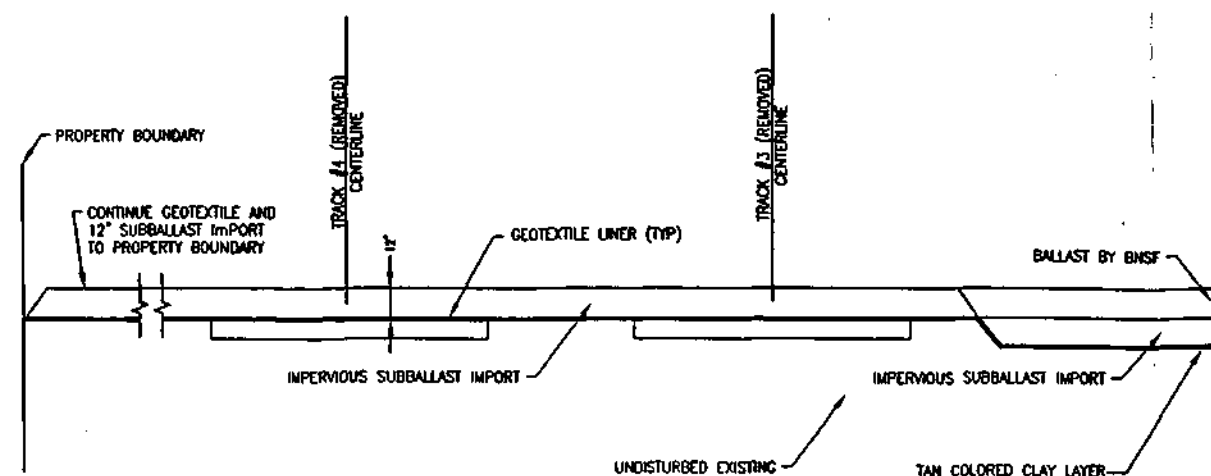


BID
ISSUE
JULY, 2004
DRAWING NUMBER
C-6
OF

Jul 26, 2004 - 10:57am

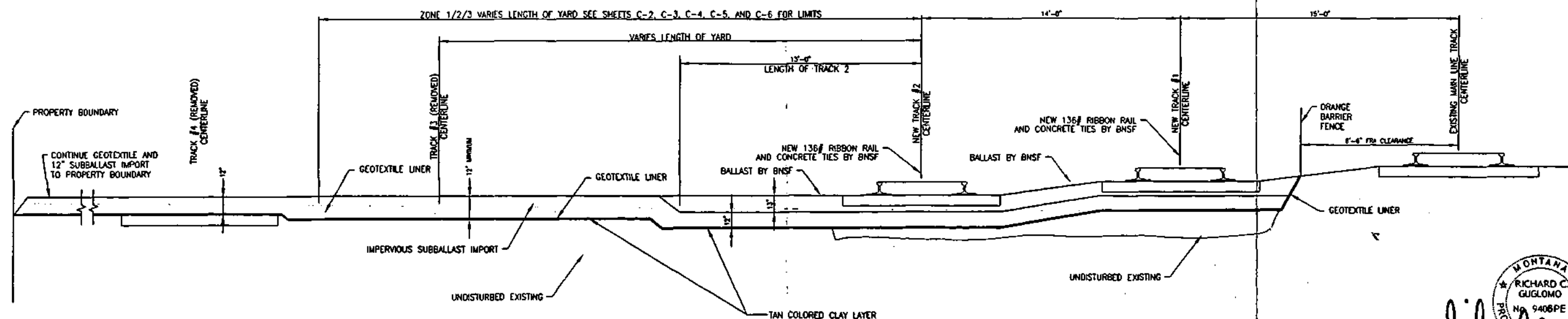
GENERAL NOTES:

1. REMOVE CONTAMINATED MATERIAL THE LENGTH OF THE YARD TO THE TAN CLAY LAYER. MAINTAIN EXCAVATED AREA IN CLEAN CONDITION. WHEN CONTAMINATED MATERIAL HAS BEEN REMOVED AS SHOWN ON THE DRAWINGS, REMOVE ADDITIONAL CLEAN MATERIAL TO 25 INCHES BELOW THE TOP OF THE NEW TIES FOR TRACKS 1 AND 2. IF LINCOLN COUNTY LANDFILL APPROVES, CLEAN MATERIAL MAY BE DISPOSED OF AT LANDFILL. SEE SPECIFICATION SECTION 02302 FOR ADDITIONAL REQUIREMENTS.



PARTIAL SECTION EAST OF BRIDGE

SCALE: 3/8" = 1'



SECTION WEST OF BRIDGE

SCALE: 3/8" = 1'



Richard C. Guglielmo
 MONTANA
 RICHARD C. GUGLIELMO
 No. 9408PE
 EXPIRES - 6/30/2006
 SIGNED - 7/26/2004

NO.	DATE	DESCRIPTION OF REVISIONS

SCALE BAR:
 0 1"
 0 25.4mm
 IF THIS BAR IS NOT
 DIMENSION SHOWN,
 ADJUST SCALES ACCORDINGLY

ENGR. C. SOULE
 DRWN. D. ROTH
 CHDR. R. GUGLIEMO
 BNSF APPROVAL
 BY: DATE:

Kennedy/Jenks Consultants
 Engineers & Scientists
 32001 32nd Ave. S, Suite 100
 Federal Way, Washington
 98001



The Burlington Northern and Santa Fe Railway Company
 LIBBY RAILYARD
 RESPONSE ACTION
 LIBBY, MONTANA

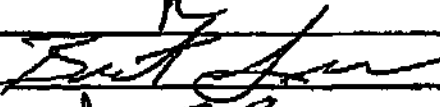
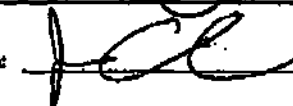
TYPICAL SECTIONS
 EAST AND WEST
 OF THE HIGHWAY BRIDGE

BID
 ISSUE
 JULY 2004
 DRAWING NUMBER
C-22
 OF

Appendix B

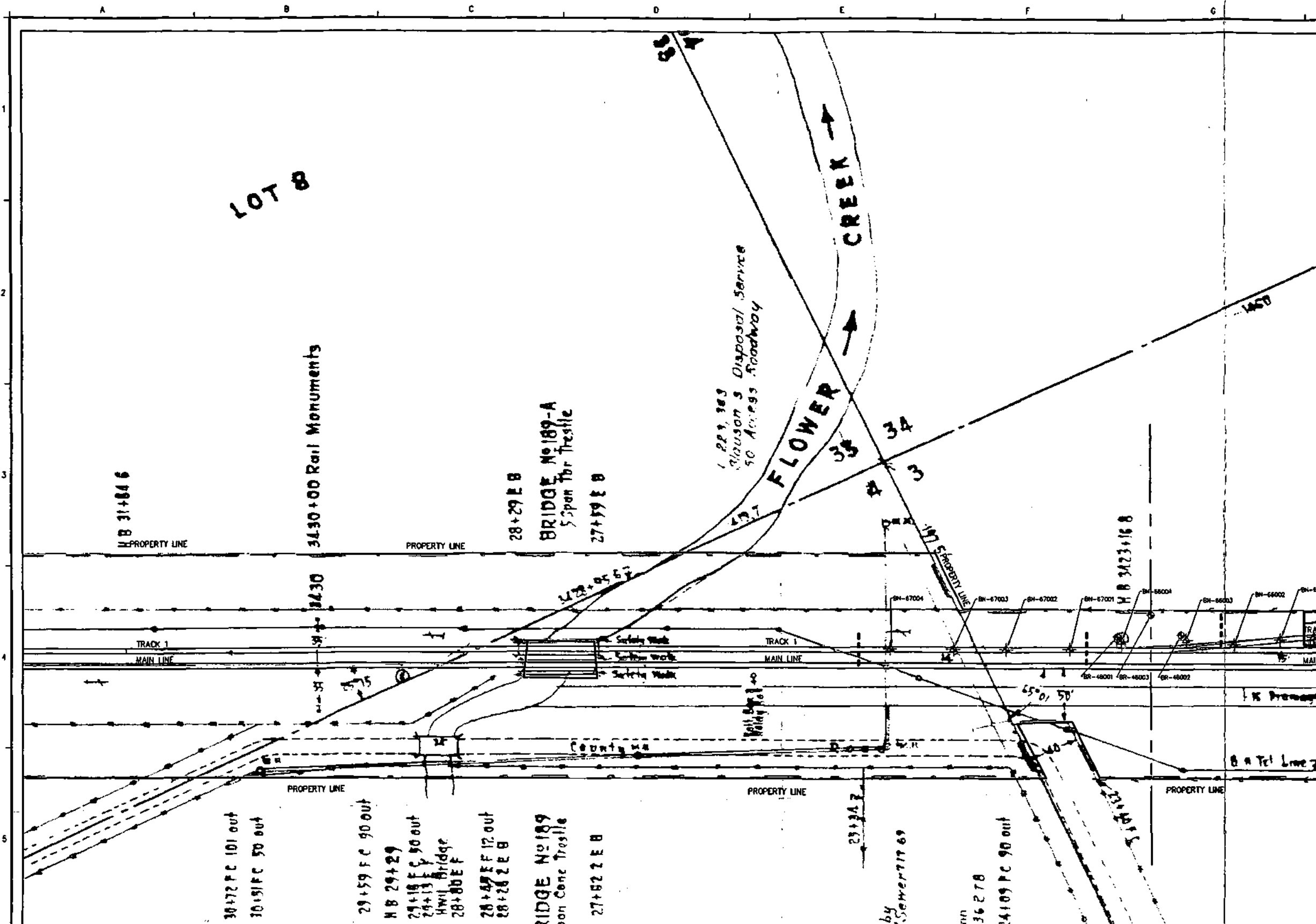
Request for Information (RFI) Forms

Libby Asbestos Superfund Site
BNSF Libby Rail Yard Response Action 2004
RFI - REQUEST FOR INFORMATION

DATE: Sept. 24, 2004	RFI NO. 2004-1 INITIATED BY: Kennedy Jenks Consultants	CONTRACTOR: BNSF (Kennedy/Jenks)	CONTRACT NO.
CONTRACT DESCRIPTION: BNSF Libby Rail Yard Response Action 2004		ATTENTION OF: Jim Christianson, Region 8 EPA	
SUBJECT: <input type="radio"/> ELECTRICAL <input type="radio"/> MECHANICAL <input checked="" type="radio"/> CIVIL <input type="radio"/> STRUCTURAL/ARCHITECTURAL <input type="radio"/> INSTRUMENTATION			
OPERABLE UNIT		REFERENCE DWG., P.O., TAG, SPECIFICATION NO. (FOR DEVIATIONS OR DEFICIENCIES) ETC. Drawing Sheets C2 through C5	
PROBLEM DESCRIPTION Soil tested as clean is currently scheduled to be removed and transported to the landfill as "clean" cover material. Sub ballast material will be brought in from an approved outside source, and placed over filter fabric that will cap the railroad ties that remain in place as described for Zones 4, 6 and 7. Soil sampled as clean could be used as a sub base to the 1/2-inch minus sub ballast material, thereby reducing transportation over public roads, and reducing potential ambient dust from trucking operations.			
<input type="radio"/> Design Deficiency <input checked="" type="radio"/> Engineering Change Request <input type="radio"/> Agency Directive <input type="radio"/> Construction Deficiency <input type="radio"/> Schedule		<input checked="" type="radio"/> Material Substitution <input type="radio"/> Vendor Material Deficiency <input type="radio"/> Scope <input type="radio"/> Clarification/Information <input type="radio"/> Other Final Design Document	PRP Representative Dave Diem (Kennedy/Jenks Consultants) for BNSF
RESPONSE/DIRECTIVE Place a lift of soil that has documented analytical clearance at a thickness of up to, but no more than, 6-inches only in the Zone 4, 6 and 7 areas. The material will be placed over the filter fabric as originally designed, and then compacted. Once this lift has been compacted, another lift (6-inch minimum thickness) of imported 1/2-inch minus base material will be placed and compacted to bring the grade up to design specifications. Random composite samples will be collected from the "stockpiled" clean soil to serve as a QA/QC for the presence of asbestos form material. Compaction will be measured by qualitative methods (relative compaction) for Zones 4, 6 and 7 due to the underlying railroad ties and low vehicular traffic levels anticipated in the future.			
COMMENTS Ensure the soil is used at fabric interface, is no thicker than 6", and is covered by at least 6" of imported soil.			
Kennedy/Jenks: 		Date: 9/29/04	
EPA Representative: 		Date: 9/29/04	
CC: File: RFI Log Project Manager: Chuck Soule / Kennedy/Jenks Construction Manager: Dave Diem / Kennedy/Jenks Other: Jim Christianson / EPA, Courtney Zamora / Volpe			

Appendix C

Soil Sample Location Drawings



- LEGEND:**
- ✦ CHARACTERIZATION SAMPLES 2003 OR LATER
 - ✦ CHARACTERIZATION SAMPLES 2002 OR EARLIER
 - ⬢ CLEARANCE SAMPLES
 - ⊙ DEEPER CLEARANCE SAMPLES AT APPROXIMATE LOCATIONS OF EARLIER FAILED CLEARANCE SAMPLE
 - ▨ AREA EXCAVATED MORE THAN 4 FEET BELOW GROUND SURFACE, BUT DEEPEST SAMPLE OBTAINED DETECTABLE LIBBY AMPHIBOLE

PLAN
SCALE: 1" = 40'

MONTANA
★ RICHARD C. GUGLIONE ★
No. 9406PE
LICENSED PROFESSIONAL ENGINEER

EXPIRES - 6/30/2006
SIGNED - 7/26/2004

0 20 40 60 80 100 120
SCALE: 1" = 40'-0"

NO.	DATE	DESCRIPTION OF REVISIONS

SCALE BAR:
0 1" 25.4mm
IF THIS BAR IS NOT DIMENSION SHOWN, ADJUST SCALES ACCORDINGLY

ENGR. C. SOULE	DATE:
DRAWN: D. BORTH	
CHECKED: R. GUGLIONE	
INVS. APPROVAL:	
BY:	

Kennedy/Jenks Consultants
Engineers & Scientists
32001 32nd Ave. S, Suite 100
Federal Way, Washington 98001

The Burlington Northern and Santa Fe Railway Company
LIBBY RAILYARD
RESPONSE ACTION
LIBBY, MONTANA

**SOIL SAMPLE LOCATION MAP
SHEET 1**

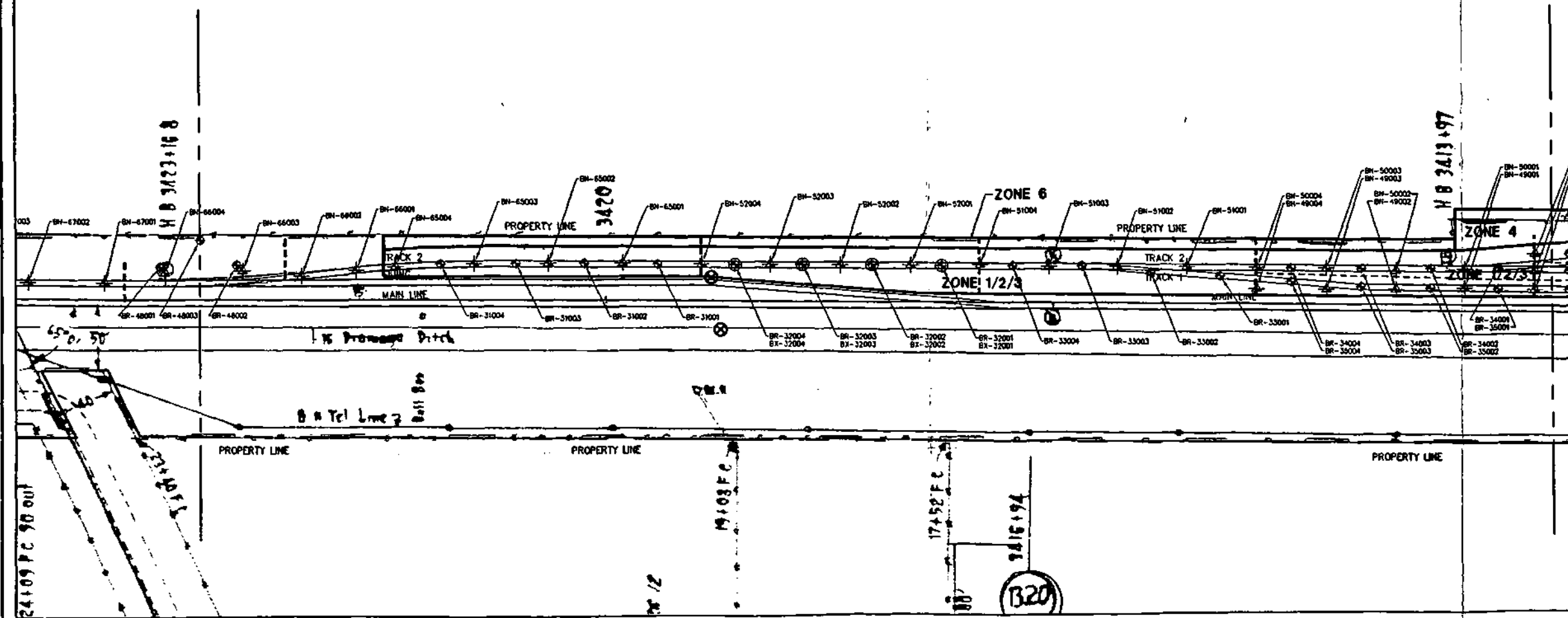
BID
ISSUE
JAN. 2004
DRAWING NUMBER
C-2S
OF

SECTION 34, T. 91 N, R. 31 W
3, T. 90 N, R. 31 W

LOT 4

LEGEND:

- ✦ CHARACTERIZATION SAMPLES 2003 OR LATER
- ✦ CHARACTERIZATION SAMPLES 2002 OR EARLIER
- ⊕ CLEARANCE SAMPLES
- ⊙ DEEPER CLEARANCE SAMPLES AT APPROXIMATE LOCATIONS OF EARLIER FAILED CLEARANCE SAMPLE
- ▨ AREA EXCAVATED MORE THAN 4 FEET BELOW GROUND SURFACE, BUT DEEPEST SAMPLE CONTAINED DETECTABLE LIBBY AMPHIBOLE

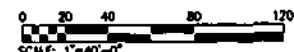


PLAN

SCALE: 1" = 40'



EXPIRES - 6/30/2006
SIGNED - 7/26/2004



NO.	DATE	DESCRIPTION OF REVISIONS

SCALE BAR
0 1"
0 25.4mm
IF THIS BAR IS NOT
DIMENSION SHOWN,
ADJUST SCALES ACCORDINGLY

ENGR. C. SOULE
DRWN: D. ROBY
CHWD: R. GUGLIEMO
ENST APPROVAL
DATE: _____

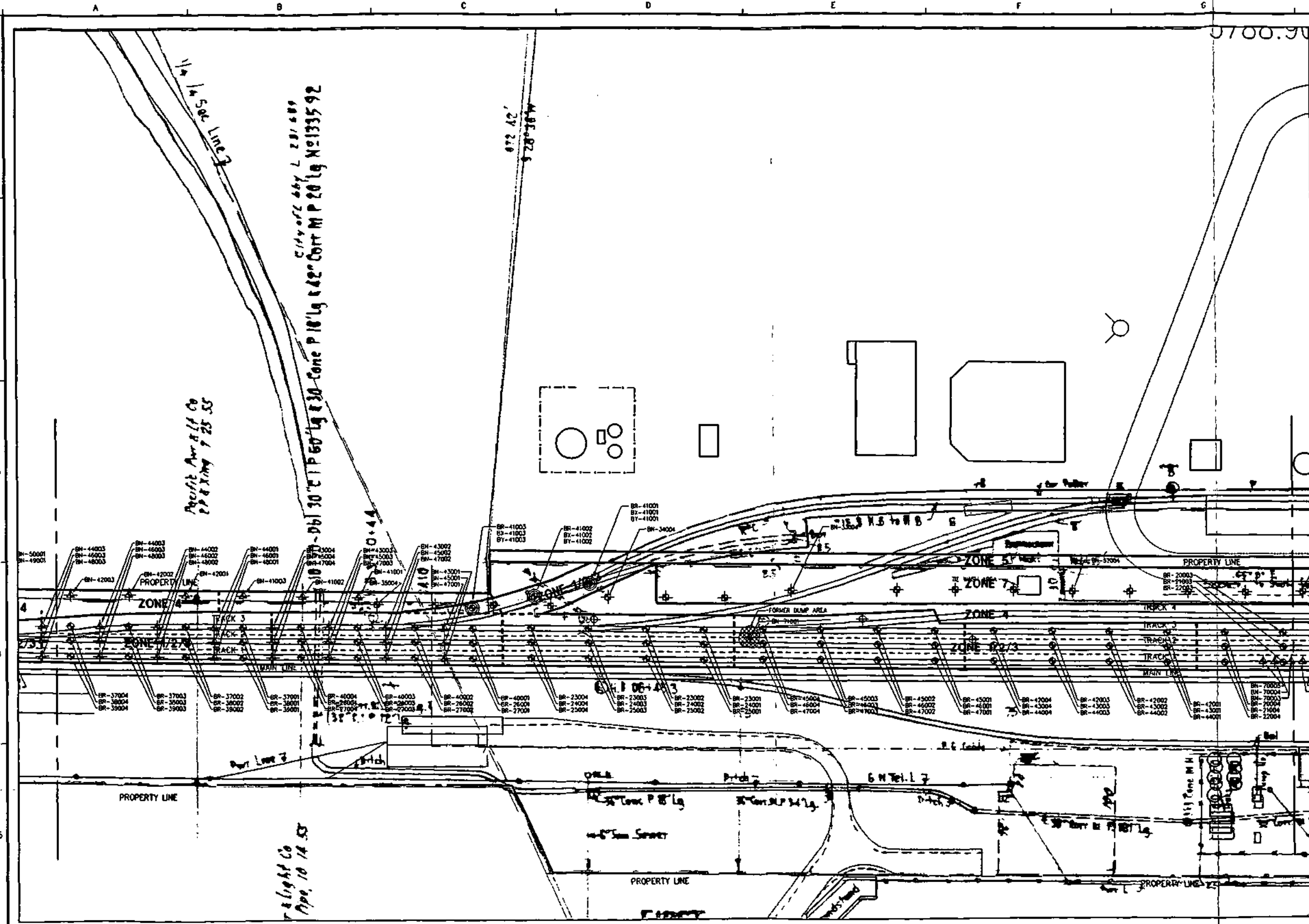
Kennedy/Jenke Consultants
Engineers & Scientists
32001 32nd Ave. S, Suite 100
Federal Way, Washington 98001



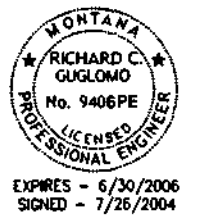
The Burlington Northern and Santa Fe Railway Company
LIBBY RAILYARD
RESPONSE ACTION
LIBBY, MONTANA

SOIL SAMPLE LOCATION MAP
SHEET 2

BID
ISSUE
JULY, 2004
DRAWING NUMBER
C-3S



- LEGEND:**
- ✦ CHARACTERIZATION SAMPLES 2003 OR LATER
 - ✦ CHARACTERIZATION SAMPLES 2002 OR EARLIER
 - ✦ CLEARANCE SAMPLES
 - ⊙ DEEPER CLEARANCE SAMPLES AT APPROXIMATE LOCATIONS OF EARLIER FAILED CLEARANCE SAMPLE
 - ▨ AREA EXCAVATED MORE THAN 4 FEET BELOW GROUND SURFACE, BUT DEEPEST SAMPLE CONTAINED DETECTABLE LIBBY AMPHIBOLE




PLAN
SCALE: 1" = 40'

NO.	DATE	DESCRIPTION OF REVISIONS

SCALE BAR
0 1"
0 25.4mm
IF THIS BAR IS NOT
DIMENSION SHOWN,
ADJUST SCALES ACCORDINGLY

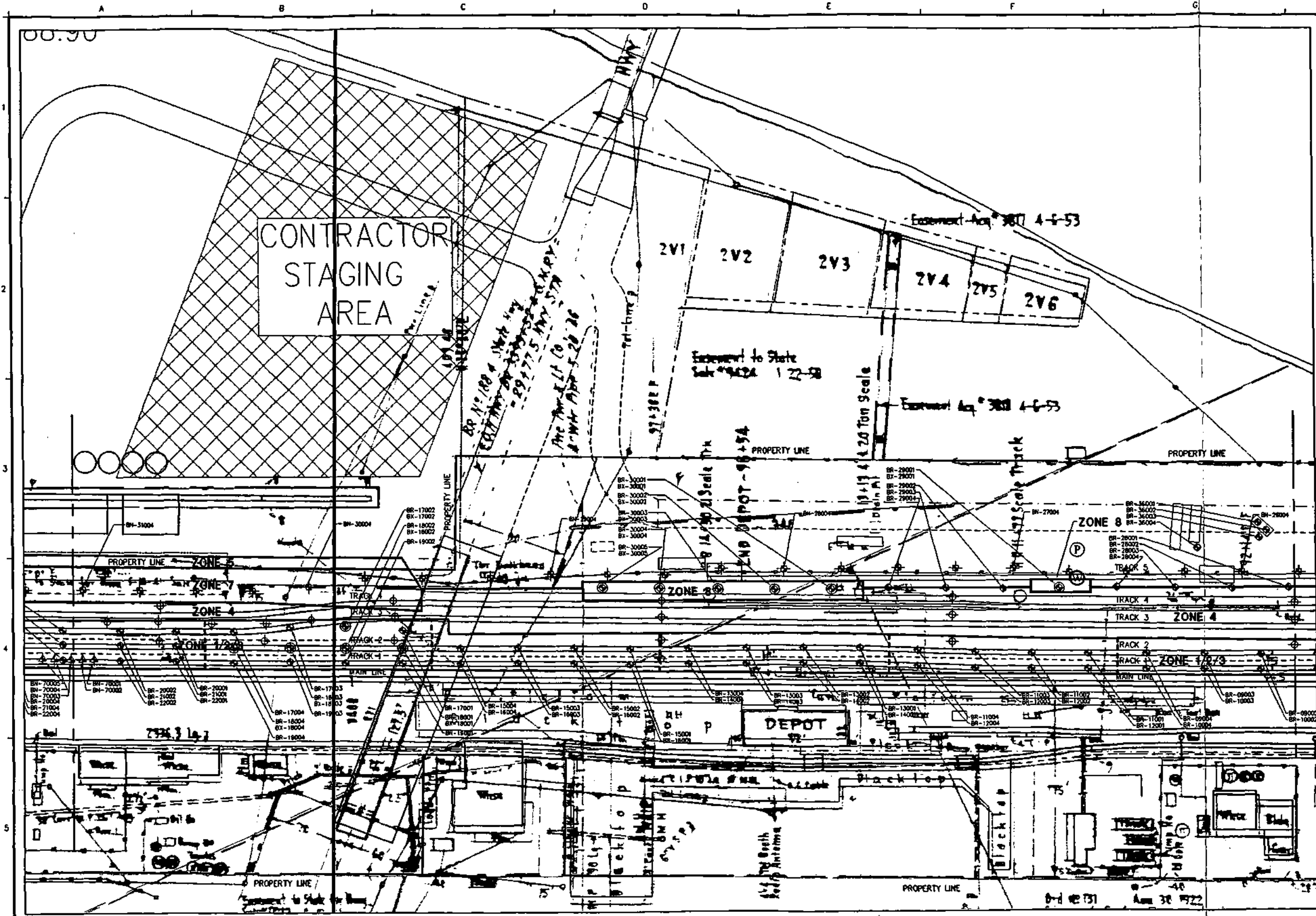
ENGR. C. SOALE
DRWN: D. ROTH
CHD: R. GUGLIEMO
GNS APPROVAL
BY: _____ DATE: _____

Kennedy/Jenks Consultants
Engineers & Scientists
32001 32nd Ave. S, Suite 100
Federal Way, Washington 98001

 **The Burlington Northern and Santa Fe Railway Company**
LIBBY RAILYARD
RESPONSE ACTION
LIBBY, MONTANA

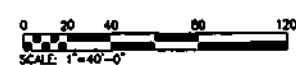
SOIL SAMPLE LOCATION MAP
SHEET 3

BID
ISSUE
JULY 2004
DRAWING NUMBER
C-4S
OF



- LEGEND:**
- ✦ CHARACTERIZATION SAMPLES 2003 OR LATER
 - ✦ CHARACTERIZATION SAMPLES 2002 OR EARLIER
 - ⊕ CLEARANCE SAMPLES
 - ⊕ DEEPER CLEARANCE SAMPLES AT APPROXIMATE LOCATIONS OF EARLIER FAILED CLEARANCE SAMPLE
 - ▨ AREA EXCAVATED MORE THAN 4 FEET BELOW GROUND SURFACE, BUT DEEPEST SAMPLE CONTAINED DETECTABLE LIBBY AMPHIBOLE

PLAN
SCALE: 1" = 40'




MONTANA
★ RICHARD C. GUGLIONE ★
No. 9406PE
LICENSED PROFESSIONAL ENGINEER
EXPIRES - 6/30/2006
SIGNED - 7/26/2004

NO.	DATE	DESCRIPTION OF REVISIONS

SCALE BAR:
0 1" 25.4mm
IF THIS BAR IS NOT
DIMENSION SHOWN,
ADJUST SCALES ACCORDINGLY

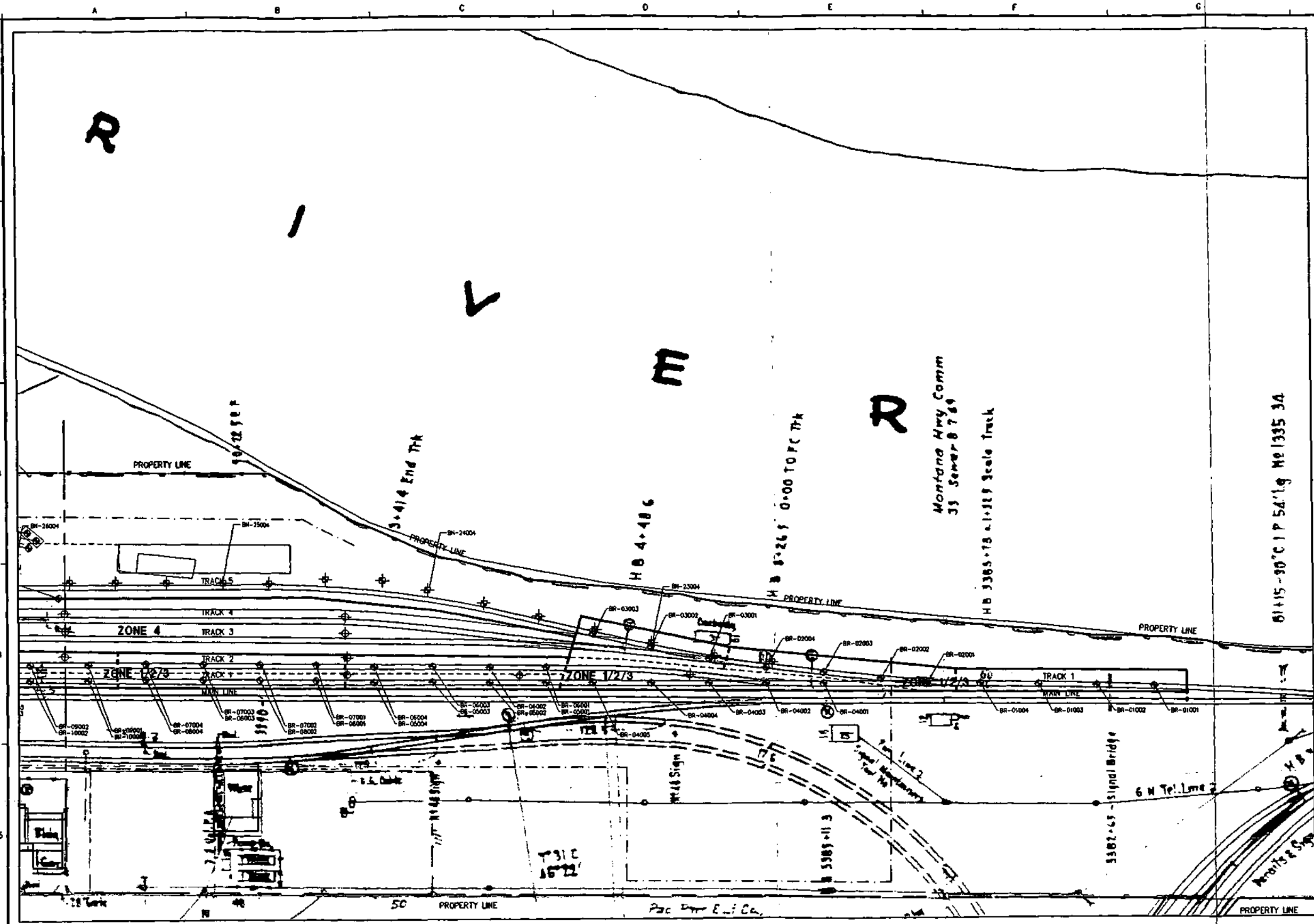
ENGR: C. SOULE
DRWN: D. ROTH
CHKD: R. GUGLIONE
BHSF APPROVAL
DATE: _____

Kennedy/Jenks Consultants
Engineers & Scientists
32001 32nd Ave. S, Suite 100
Federal Way, Washington 98001

 **The Burlington Northern and Santa Fe Railway Company**
LIBBY RAILYARD
RESPONSE ACTION
LIBBY, MONTANA

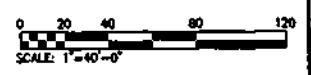
SOIL SAMPLE LOCATION MAP
SHEET 4

BID
ISSUE
JULY 2004
DRAWING NUMBER
C-5S



- LEGEND:**
- ✦ CHARACTERIZATION SAMPLES 2003 OR LATER
 - ✦ CHARACTERIZATION SAMPLES 2002 OR EARLIER
 - ⊕ CLEARANCE SAMPLES
 - ⊗ DEEPER CLEARANCE SAMPLES AT APPROXIMATE LOCATIONS OF EARLIER FAILED CLEARANCE SAMPLE
 - ▨ AREA EXCAVATED MORE THAN 4 FEET BELOW GROUND SURFACE, BUT DEEPEST SAMPLE CONTAINED DETECTABLE LIBBY AMPHIBOLE

MONTANA
 RICHARD C. GUGLIONE
 No. 9408PE
 LICENSED PROFESSIONAL ENGINEER
 EXPIRES - 6/30/2006
 SIGNED - 7/26/2004



PLAN
 SCALE: 1" = 40'

NO.	DATE	DESCRIPTION OF REVISIONS

SCALE BAR:
 0 1"
 0 25.4mm
 IF THIS BAR IS NOT DIMENSIONED SHOWN, ADJUST SCALES ACCORDINGLY

CHKD: C. SOULE
 DRWN: D. ROTH
 CHKD: R. GUGLIONE
 ENGR APPROVAL
 BY: DATE:

Kennedy/Jenks Consultants
 Engineers & Scientists
 32001 32nd Ave. S, Suite 100
 Federal Way, Washington 98003



The Burlington Northern and Santa Fe Railway Company
 LIBBY RAILYARD
 RESPONSE ACTION
 LIBBY, MONTANA

SOIL SAMPLE LOCATION MAP
SHEET 5

BID
 ISSUE
 JULY, 2004
 DRAWING NUMBER
C-6S
 OF

Appendix D

Analytical Data Tables

Table D-1
Characterization Soil Samples
BNSF Libby Railway Response Action 2004

Index ID	Analytical Method	Date Received by Laboratory	Trivalent-Arsenic (%)	Chrysotholite (%)	Other Amphiboles (%)	LAB	PLM Result	PLM (%F) Result	TEM (%F) Result	Comments
MP1313	EPA asbestos in Soil Method ²	4/23/2001	NA	NA	NA	Clayton	ND	ND	ND	
MP1315	EPA asbestos in Soil Method ²	4/23/2001	NA	NA	NA	Clayton	ND	ND	ND	
MP1316	EPA asbestos in Soil Method ²	4/23/2001	NA	NA	NA	Clayton	ND	ND	ND	
MP1317	EPA asbestos in Soil Method ²	4/23/2001	NA	NA	NA	Clayton	ND	ND	ND	
MP1318	EPA asbestos in Soil Method ²	4/23/2001	NA	NA	NA	Clayton	ND	ND	ND	
MP1319	EPA asbestos in Soil Method ²	4/23/2001	NA	NA	NA	Clayton	ND	ND	ND	
1-E	EPA asbestos in Soil Method ²	4/24/2001	NA	NA	NA	Clayton	ND	ND	ND	
2-W	EPA asbestos in Soil Method ²	4/24/2001	NA	NA	NA	Clayton	ND	ND	ND	
3-E	EPA asbestos in Soil Method ²	4/24/2001	NA	NA	NA	Clayton	ND	ND	ND	
4-W	EPA asbestos in Soil Method ²	4/24/2001	NA	NA	NA	Clayton	0.5	ND	ND	
5-W	EPA asbestos in Soil Method ²	4/24/2001	NA	NA	NA	Clayton	ND	ND	ND	
6-E	EPA asbestos in Soil Method ²	4/24/2001	NA	NA	NA	Clayton	ND	ND	ND	
7-W	EPA asbestos in Soil Method ²	4/24/2001	NA	NA	NA	Clayton	ND	0.25	ND	
8-W	EPA asbestos in Soil Method ²	4/24/2001	NA	NA	NA	Clayton	0.75	ND	ND	
9-W	EPA asbestos in Soil Method ²	4/24/2001	NA	NA	NA	Clayton	ND	ND	ND	
10-W	EPA asbestos in Soil Method ²	4/24/2001	NA	NA	NA	Clayton	ND	ND	ND	
BN-01000	PLM 9002, Issue 2	12/12/2001	ND	ND	ND	EMSL27	NA	NA	NA	comp-1
BN-02000	PLM 9002, Issue 2	12/12/2001	ND	ND	ND	EMSL27	NA	NA	NA	comp-2
BN-03000	PLM 9002, Issue 2	12/12/2001	ND	ND	ND	EMSL27	NA	NA	NA	comp-3
BN-04000	PLM 9002, Issue 2	12/12/2001	ND	ND	ND	EMSL27	NA	NA	NA	comp-4
BN-05000	PLM 9002, Issue 2	12/12/2001	ND	ND	ND	EMSL27	NA	NA	NA	comp-5
BN-06000	PLM 9002, Issue 2	12/12/2001	ND	ND	ND	EMSL27	NA	NA	NA	comp-6
BN-07000	PLM 9002, Issue 2	12/12/2001	ND	ND	ND	EMSL27	NA	NA	NA	comp-7
BN-08000	PLM 9002, Issue 2	12/12/2001	ND	ND	ND	EMSL27	NA	NA	NA	comp-8
BN-09000	PLM 9002, Issue 2	12/12/2001	<1	ND	ND	EMSL27	NA	NA	NA	comp-9
BN-09001	PLM 9002, Issue 2	12/12/2001	ND	ND	ND	EMSL	NA	NA	NA	Grid-9 Center
BN-09002	PLM 9002, Issue 2	12/12/2001	<1	ND	ND	EMSL	NA	NA	NA	Grid-9 NW
BN-09003	PLM 9002, Issue 2	12/12/2001	<1	ND	ND	EMSL	NA	NA	NA	Grid-9 SE
BN-09004	PLM 9002, Issue 2	12/12/2001	<1	ND	ND	EMSL	NA	NA	NA	Grid-9 SW
BN-09005	PLM 9002, Issue 2	12/12/2001	<1	ND	ND	EMSL	NA	NA	NA	Grid-9 NE
BN-10000	PLM 9002, Issue 2	12/12/2001	ND	ND	ND	EMSL27	NA	NA	NA	comp-10
BN-11000	PLM 9002, Issue 2	12/12/2001	ND	ND	ND	EMSL27	NA	NA	NA	comp-11
BN-12000	PLM 9002, Issue 2	12/12/2001	ND	ND	ND	EMSL27	NA	NA	NA	comp-12
BN-13000	PLM 9002, Issue 2	12/12/2001	ND	ND	ND	EMSL27	NA	NA	NA	comp-13
BN-14000	PLM 9002, Issue 2	12/12/2001	ND	ND	ND	EMSL27	NA	NA	NA	comp-14
BN-15000	PLM 9002, Issue 2	12/12/2001	ND	ND	ND	EMSL27	NA	NA	NA	comp-15
BN-16000	PLM 9002, Issue 2	12/12/2001	ND	ND	ND	EMSL27	NA	NA	NA	comp-16
BN-17000	PLM 9002, Issue 2	12/12/2001	ND	ND	ND	EMSL27	NA	NA	NA	comp-17
BN-18000	PLM 9002, Issue 2	12/12/2001	ND	ND	ND	EMSL27	NA	NA	NA	comp-18
BN-19000	PLM 9002, Issue 2	12/12/2001	<1	ND	ND	EMSL27	NA	NA	NA	comp-19
BN-19001	PLM 9002, Issue 2	12/12/2001	ND	ND	ND	EMSL	NA	NA	NA	Grid-19 Center
BN-19002	PLM 9002, Issue 2	12/12/2001	ND	ND	ND	EMSL	NA	NA	NA	Grid-19 NW
BN-19003	PLM 9002, Issue 2	12/12/2001	<1	ND	ND	EMSL	NA	NA	NA	Grid-19 NE
BN-19004	PLM 9002, Issue 2	12/12/2001	ND	ND	ND	EMSL	NA	NA	NA	Grid-19 SE
BN-19005	PLM 9002, Issue 2	12/12/2001	ND	ND	ND	EMSL	NA	NA	NA	Grid-19 SW
BN-20000	PLM 9002, Issue 2	12/12/2001	<1	ND	ND	EMSL27	NA	NA	NA	comp-20
BN-20001	PLM 9002, Issue 2	12/12/2001	ND	ND	ND	EMSL	NA	NA	NA	Grid-20 Center
BN-20002	PLM 9002, Issue 2	12/12/2001	ND	ND	ND	EMSL	NA	NA	NA	Grid-20 NW
BN-20003	PLM 9002, Issue 2	12/12/2001	ND	ND	ND	EMSL	NA	NA	NA	Grid-20 NE
BN-20004	PLM 9002, Issue 2	12/12/2001	<1	ND	ND	EMSL	NA	NA	NA	Grid-20 SE
BN-20005	PLM 9002, Issue 2	12/12/2001	ND	ND	ND	EMSL	NA	NA	NA	Grid-20 SW
BN-21000	PLM 9002, Issue 2	12/12/2001	ND	ND	ND	EMSL27	NA	NA	NA	comp-21
BN-22000	PLM 9002, Issue 2	12/12/2001	ND	ND	ND	EMSL27	NA	NA	NA	comp-22
BN-23000	PLM 9002, Issue 2	11/26/2002	<1	ND	ND	RESI	NA	NA	NA	
BN-23001	PLM 9002, Issue 2	11/26/2002	<1	ND	ND	RESI	NA	NA	NA	
BN-23002	PLM 9002, Issue 2	1/2/2003	<1	ND	ND	RESI	NA	NA	NA	
BN-23003	PLM 9002, Issue 2	1/2/2003	<1	ND	ND	RESI	NA	NA	NA	
BN-23004	PLM 9002, Issue 2	1/2/2003	<1	ND	ND	RESI	NA	NA	NA	
BN-24000	PLM 9002, Issue 2	11/26/2002	<1	ND	ND	RESI	NA	NA	NA	
BN-24001	PLM 9002, Issue 2	1/2/2003	<1	ND	ND	RESI	NA	NA	NA	
BN-24002	PLM 9002, Issue 2	1/2/2003	<1	ND	ND	RESI	NA	NA	NA	
BN-24003	PLM 9002, Issue 2	1/2/2003	ND	ND	ND	RESI	NA	NA	NA	
BN-24004	PLM 9002, Issue 2	1/2/2003	ND	ND	ND	RESI	NA	NA	NA	
BN-25000	PLM 9002, Issue 2	11/26/2002	ND	ND	ND	RESI	NA	NA	NA	
BN-26000	PLM 9002, Issue 2	11/26/2002	ND	ND	ND	RESI	NA	NA	NA	
BN-27000	PLM 9002, Issue 2	11/26/2002	ND	ND	ND	RESI	NA	NA	NA	
BN-28000	PLM 9002, Issue 2	11/26/2002	ND	ND	ND	RESI	NA	NA	NA	
BN-29000	PLM 9002, Issue 2	11/26/2002	ND	ND	ND	RESI	NA	NA	NA	
BN-30000	PLM 9002, Issue 2	11/26/2002	<1	ND	ND	RESI	NA	NA	NA	
BN-30001	PLM 9002, Issue 2	11/26/2002	<1	ND	ND	RESI	NA	NA	NA	
BN-30002	PLM 9002, Issue 2	1/2/2003	ND	ND	ND	RESI	NA	NA	NA	
BN-30003	PLM 9002, Issue 2	1/2/2003	ND	ND	ND	RESI	NA	NA	NA	
BN-30004	PLM 9002, Issue 2	1/2/2003	<1	ND	ND	RESI	NA	NA	NA	
BN-31000	PLM 9002, Issue 2	11/26/2002	<1	ND	ND	RESI	NA	NA	NA	
BN-31001	PLM 9002, Issue 2	1/2/2003	<1	ND	ND	RESI	NA	NA	NA	
BN-31002	PLM 9002, Issue 2	1/2/2003	<1	ND	ND	RESI	NA	NA	NA	
BN-31003	PLM 9002, Issue 2	1/2/2003	<1	ND	ND	RESI	NA	NA	NA	
BN-31004	PLM 9002, Issue 2	1/2/2003	<1	ND	ND	RESI	NA	NA	NA	
BN-32000	PLM 9002, Issue 2	11/26/2002	<1	ND	ND	RESI	NA	NA	NA	
BN-32001	PLM 9002, Issue 2	1/2/2003	<1	ND	ND	RESI	NA	NA	NA	
BN-32002	PLM 9002, Issue 2	1/2/2003	<1	ND	ND	RESI	NA	NA	NA	
BN-32003	PLM 9002, Issue 2	1/2/2003	<1	ND	ND	RESI	NA	NA	NA	
BN-32004	PLM 9002, Issue 2	1/2/2003	<1	ND	ND	RESI	NA	NA	NA	
BN-33000	PLM 9002, Issue 2	11/26/2002	<1	ND	ND	RESI	NA	NA	NA	
BN-33001	PLM 9002, Issue 2	1/2/2003	<1	ND	ND	RESI	NA	NA	NA	
BN-33002	PLM 9002, Issue 2	1/2/2003	<1	ND	ND	RESI	NA	NA	NA	
BN-33003	PLM 9002, Issue 2	1/2/2003	<1	ND	ND	RESI	NA	NA	NA	
BN-33004	PLM 9002, Issue 2	1/2/2003	<1	ND	ND	RESI	NA	NA	NA	
BN-34000	PLM 9002, Issue 2	11/26/2002	<1	ND	ND	RESI	NA	NA	NA	
BN-34001	PLM 9002, Issue 2	1/2/2003	<1	ND	ND	RESI	NA	NA	NA	
BN-34002	PLM 9002, Issue 2	1/2/2003	<1	ND	ND	RESI	NA	NA	NA	

Table D-1
Characterization Soil Samples
BNSF Libby Railway Response Action 2004

Index ID	Analytical Method	Date Received by Laboratory	Thiourea-Arsenite (%) ¹	Chrysoite (%)	Other Amphibole (%)	LAB	PLM Result	PLM (%F) Result	TEM (%F) Result	Comments
BN-34003	PLM 9002, Issue 2	1/2/2003	<1	ND	ND	RES1	NA	NA	NA	
BN-34004	PLM 9002, Issue 2	1/2/2003	<1	ND	ND	RES1	NA	NA	NA	
BN-34004	PLM 9002, Issue 2	1/2/2003	<1	ND	ND	RES1	NA	NA	NA	
BN-35000	PLM 9002, Issue 2	11/26/2002	<1	ND	ND	RES1	NA	NA	NA	
BN-35001	PLM 9002, Issue 2	1/2/2003	<1	ND	ND	RES1	NA	NA	NA	
BN-35002	PLM 9002, Issue 2	1/2/2003	<1	ND	ND	RES1	NA	NA	NA	
BN-35003	PLM 9002, Issue 2	1/2/2003	<1	ND	ND	RES1	NA	NA	NA	
BN-35004	PLM 9002, Issue 2	1/2/2003	<1	ND	ND	RES1	NA	NA	NA	
BN-36000	PLM 9002, Issue 2	11/26/2002	ND	ND	ND	RES1	NA	NA	NA	
BN-37000	PLM 9002, Issue 2	11/26/2002	ND	ND	ND	RES1	NA	NA	NA	
T3-00001	PLM 9002, Issue 2	8/13/2003	ND	ND	ND	EMSL27	NA	NA	NA	
T4-00001	PLM 9002, Issue 2	8/13/2003	ND	ND	ND	EMSL27	NA	NA	NA	
BN-38000	PLM 9002, Issue 2	8/15/2003	2	ND	ND	EMSL27	NA	NA	NA	
BN-38001	PLM 9002, Issue 2	8/15/2003	2	ND	ND	EMSL27	NA	NA	NA	
BN-38002	PLM 9002, Issue 2	8/15/2003	ND	ND	ND	EMSL27	NA	NA	NA	
BN-38003	PLM 9002, Issue 2	8/15/2003	2	ND	ND	EMSL27	NA	NA	NA	
BN-38004	PLM 9002, Issue 2	8/15/2003	<1	ND	ND	EMSL27	NA	NA	NA	
BN-38005	PLM 9002, Issue 2	8/15/2003	2	ND	ND	EMSL27	NA	NA	NA	
BN-39000	PLM 9002, Issue 2	8/18/2003	2	ND	ND	EMSL27	NA	NA	NA	
BN-39001	PLM 9002, Issue 2	8/18/2003	2	ND	ND	EMSL27	NA	NA	NA	
BN-39002	PLM 9002, Issue 2	8/18/2003	ND	ND	ND	EMSL27	NA	NA	NA	
BN-39003	PLM 9002, Issue 2	8/18/2003	2	ND	ND	EMSL27	NA	NA	NA	
BN-39004	PLM 9002, Issue 2	8/18/2003	ND	ND	ND	EMSL27	NA	NA	NA	
BN-39005	PLM 9002, Issue 2	8/18/2003	<1	ND	ND	EMSL27	NA	NA	NA	
BN-40000	PLM 9002, Issue 2	8/18/2003	2	ND	ND	EMSL27	NA	NA	NA	
BN-40001	PLM 9002, Issue 2	8/18/2003	2	ND	ND	EMSL27	NA	NA	NA	
BN-40002	PLM 9002, Issue 2	8/18/2003	2	ND	ND	EMSL27	NA	NA	NA	
BN-40003	PLM 9002, Issue 2	8/18/2003	3	ND	ND	EMSL27	NA	NA	NA	
BN-40004	PLM 9002, Issue 2	8/18/2003	<1	ND	ND	EMSL27	NA	NA	NA	
BN-40005	PLM 9002, Issue 2	8/18/2003	<1	ND	ND	EMSL27	NA	NA	NA	
BN-00123	PLM 9002, Issue 2	8/20/2003	ND	ND	ND	EMSL27	NA	NA	NA	
BN-00124	PLM 9002, Issue 2	8/20/2003	ND	ND	ND	EMSL27	NA	NA	NA	
BN-00125	PLM 9002, Issue 2	8/20/2003	ND	ND	ND	EMSL27	NA	NA	NA	
BN-00126	PLM 9002, Issue 2	8/20/2003	ND	ND	ND	EMSL27	NA	NA	NA	
BN-00127	PLM 9002, Issue 2	8/20/2003	ND	ND	ND	EMSL27	NA	NA	NA	
BN-00128	PLM 9002, Issue 2	8/20/2003	ND	ND	ND	EMSL27	NA	NA	NA	
BN-00129	PLM 9002, Issue 2	8/20/2003	ND	ND	ND	EMSL27	NA	NA	NA	
BN-00130	PLM 9002, Issue 2	8/20/2003	ND	ND	ND	EMSL27	NA	NA	NA	
BN-00131	PLM 9002, Issue 2	8/20/2003	ND	ND	ND	EMSL27	NA	NA	NA	
BN-00132	PLM 9002, Issue 2	8/20/2003	ND	ND	ND	EMSL27	NA	NA	NA	
BN-41000	PLM 9002, Issue 2	7/14/2004	<1	ND	ND	EMSL27	NA	NA	NA	Split of BN-43000
BN-42000	PLM 9002, Issue 2	7/14/2004	<1	ND	ND	EMSL27	NA	NA	NA	Split of BN-44000
BN-43000	PLM 9002, Issue 2	7/14/2004	ND	ND	ND	EMSL27	NA	NA	NA	Split of BN-45000
BN-44000	PLM 9002, Issue 2	7/14/2004	<1	ND	ND	EMSL27	NA	NA	NA	Split of BN-46000
BN-45000	PLM 9002, Issue 2	7/14/2004	<1	ND	ND	EMSL27	NA	NA	NA	Split of BN-47000
BN-46000	PLM 9002, Issue 2	7/14/2004	<1	ND	ND	EMSL27	NA	NA	NA	Split of BN-48000
BN-47000	PLM 9002, Issue 2	7/14/2004	<1	ND	ND	EMSL27	NA	NA	NA	Split of BN-49000
BN-48000	PLM 9002, Issue 2	7/14/2004	ND	ND	ND	EMSL27	NA	NA	NA	Split of BN-50000
BN-49000	PLM 9002, Issue 2	7/14/2004	ND	ND	ND	EMSL27	NA	NA	NA	Split of BN-51000
BN-50000	PLM 9002, Issue 2	7/14/2004	ND	ND	ND	EMSL27	NA	NA	NA	Split of BN-52000
BN-51000	PLM 9002, Issue 2	7/14/2004	<1	ND	ND	EMSL27	NA	NA	NA	Split of BN-53000
BN-52000	PLM 9002, Issue 2	7/14/2004	<1	ND	ND	EMSL27	NA	NA	NA	Split of BN-54000
BN-53000	PLM 9002-VE	7/28/2004	ND	ND	ND	EMSL04	NA	NA	NA	Split of BN-55000
BN-54000	PLM 9002-VE	7/28/2004	ND	ND	ND	EMSL04	NA	NA	NA	Split of BN-56000
BN-55000	PLM 9002-VE	7/28/2004	ND	ND	ND	EMSL04	NA	NA	NA	Split of BN-57000
BN-56000	PLM 9002-VE	7/28/2004	ND	ND	ND	EMSL04	NA	NA	NA	Split of BN-58000
BN-57000	PLM 9002-VE	7/28/2004	ND	ND	ND	EMSL04	NA	NA	NA	Split of BN-59000
BN-58000	PLM 9002-VE	7/28/2004	TR	ND	ND	EMSL04	NA	NA	NA	Split of BN-60000
BN-59000	PLM 9002-VE	7/28/2004	ND	ND	ND	EMSL04	NA	NA	NA	Split of BN-61000
BN-60000	PLM 9002-VE	7/28/2004	ND	ND	ND	EMSL04	NA	NA	NA	Split of BN-62000
BN-61000	PLM 9002-VE	7/28/2004	ND	ND	ND	EMSL04	NA	NA	NA	Split of BN-63000
BN-62000	PLM 9002-VE	7/28/2004	ND	ND	ND	EMSL04	NA	NA	NA	Split of BN-64000
BN-63000	PLM 9002-VE	7/28/2004	TR	ND	ND	EMSL04	NA	NA	NA	Split of BN-65000
BN-64000	PLM 9002-VE	7/28/2004	ND	ND	ND	EMSL04	NA	NA	NA	Split of BN-66000
BN-65000	PLM 9002, Issue 2	9/9/2004	<1	ND	ND	EMSL04	NA	NA	NA	
BN-66000	PLM 9002, Issue 2	9/9/2004	<1	ND	ND	EMSL04	NA	NA	NA	
BN-66001	PLM 9002, Issue 2	9/9/2004	ND	ND	ND	EMSL04	NA	NA	NA	
BN-66002	PLM 9002, Issue 2	9/9/2004	ND	ND	ND	EMSL04	NA	NA	NA	
BN-66003	PLM 9002, Issue 2	9/9/2004	<1	ND	ND	EMSL04	NA	NA	NA	
BN-66004	PLM 9002, Issue 2	9/9/2004	<1	ND	ND	EMSL04	NA	NA	NA	
BN-67000	PLM 9002, Issue 2	9/9/2004	ND	ND	ND	EMSL04	NA	NA	NA	
BN-68001	PLM 9002, Issue 2	9/14/2004	ND	ND	ND	EMSL04	NA	NA	NA	
BN-70001	PLM 9002, Issue 2	9/24/2004	ND	ND	ND	EMSL04	NA	NA	NA	
BN-70002	PLM 9002, Issue 2	9/24/2004	<1	ND	ND	EMSL04	NA	NA	NA	
BN-70003	PLM 9002, Issue 2	9/24/2004	<1	ND	ND	EMSL04	NA	NA	NA	
BN-70004	PLM 9002, Issue 2	9/24/2004	<1	ND	ND	EMSL04	NA	NA	NA	
BN-70005	PLM 9002, Issue 2	9/24/2004	ND	ND	ND	EMSL04	NA	NA	NA	
BN-71001	PLM 9002, Issue 2	10/1/2004	<1	ND	ND	EMSL04	NA	NA	NA	

1 - Libby Amphibole % for PLM 9002-VE Sample Method
2 - Samples were analyzed by EPA 600 and TEM Semi-quantitative
NA- Not Analyzed, Not Available
ND- Not Detected
TR- Trace

Table D-2
Clearance Soil Samples
BNSF Libby Railway Response Action 2004

Sample ID	COC Number	Appearance	Analytical Method	Date Collected	Date Analyzed	Asbestos Percentage	Asbestos Type
BR-01000	B0015	Brown, Tan Fibrous Homogeneous	9002, Issue 2 ¹	9/15/2004	9/16/2004	ND	NA
BR-02000	B0016	Brown, Tan Fibrous Homogeneous	9002, Issue 2 ¹	9/16/2004	9/17/2004	ND	NA
BR-03000	B0021	Brown, Tan Fibrous Homogeneous	9002, Issue 2 ¹	9/20/2004	9/20/2004	ND	NA
BR-04000	B0021	Brown, Tan Fibrous Homogeneous	9002, Issue 2 ¹	9/20/2004	9/20/2004	ND	NA
BR-05000	B0022	Brown, Tan Fibrous Homogeneous	9002, Issue 2 ¹	9/21/2004	9/22/2004	ND	NA
BR-06000	B0022	Brown, Tan Fibrous Homogeneous	9002, Issue 2 ¹	9/21/2004	9/22/2004	ND	NA
BR-07000	B0023	Brown, Tan Fibrous Homogeneous	9002, Issue 2 ¹	9/21/2004	9/22/2004	ND	NA
BR-08000	B0023	Brown, Tan Fibrous Homogeneous	9002, Issue 2 ¹	9/21/2004	9/22/2004	ND	NA
BR-09000	B0026	Brown, Tan Fibrous Homogeneous	9002, Issue 2 ¹	9/22/2004	9/24/2004	ND	NA
BR-10000	B0026	Brown, Tan Fibrous Homogeneous	9002, Issue 2 ¹	9/22/2004	9/24/2004	ND	NA
BR-11000	B0027	Brown, Tan Fibrous Homogeneous	9002, Issue 2 ¹	9/22/2004	9/24/2004	ND	NA
BR-12000	B0027	Brown, Tan Fibrous Homogeneous	9002, Issue 2 ¹	9/22/2004	9/24/2004	ND	NA
BR-13000	B0028	Brown, Tan Fibrous Homogeneous	9002, Issue 2 ¹	9/23/2004	9/26/2004	ND	NA
BR-14000	B0028	Brown, Tan Fibrous Homogeneous	9002, Issue 2 ¹	9/24/2004	9/26/2004	ND	NA
BR-15000	B0029	Brown, Tan Fibrous Homogeneous	9002, Issue 2 ¹	9/24/2004	9/26/2004	ND	NA
BR-16000	B0029	Brown, Tan Fibrous Homogeneous	9002, Issue 2 ¹	9/24/2004	9/26/2004	ND	NA
BR-17000	B0049	Tan Fibrous Homogeneous	9002, Issue 2 ¹	9/28/2004	9/30/2004	<1%	Tremolite/Actinolite
BR-17001	B0049	Beige Fibrous Homogeneous	9002, Issue 2 ¹	9/28/2004	10/2/2004	ND	NA
BR-17002	B0049	Brown Fibrous Homogeneous	9002, Issue 2 ¹	9/28/2004	10/2/2004	<1%	Tremolite/Actinolite
BX-17002	B0060	Brown Fibrous Homogeneous	9002, Issue 2 ¹	10/4/2004	10/5/2004	ND	NA
BR-17003	B0049	Beige Fibrous Homogeneous	9002, Issue 2 ¹	9/28/2004	10/2/2004	ND	NA
BR-17004	B0049	Beige Fibrous Homogeneous	9002, Issue 2 ¹	9/28/2004	10/2/2004	ND	NA
BR-18000	B0049	Brown, Tan Fibrous Homogeneous	9002, Issue 2 ¹	9/28/2004	9/30/2004	<1%	Tremolite/Actinolite
BX-18000	B0103	Tan Fibrous Homogeneous	9002, Issue 2 ¹	10/19/2004	10/20/2004	ND	NA
BR-18001	B0049	Beige Fibrous Homogeneous	9002, Issue 2 ¹	9/28/2004	10/2/2004	ND	NA
BR-18002	B0049	Gray Fibrous Homogeneous	9002, Issue 2 ¹	9/28/2004	10/2/2004	ND	NA
BR-18003	B0049	Beige Fibrous Homogeneous	9002, Issue 2 ¹	9/28/2004	10/2/2004	ND	NA
BR-18004	B0049	Beige Fibrous Homogeneous	9002, Issue 2 ¹	9/28/2004	10/2/2004	ND	NA

Table D-2
Clearance Soil Samples
BNSF Libby Railway Response Action 2004

Sample ID	COC Number	Appearance	Analytical Method	Date Collected	Date Analyzed	Asbestos Percentage	Asbestos Type
BR-19000	B0050	Brown Fibrous Homogeneous	9002, Issue 2 ¹	9/28/2004	9/30/2004	ND	NA
BR-20000	B0050	Brown Fibrous Homogeneous	9002, Issue 2 ¹	9/28/2004	9/30/2004	ND	NA
BR-21000	B0051	Brown Fibrous Homogeneous	9002, Issue 2 ¹	9/28/2004	9/30/2004	ND	NA
BR-22000	B0051	Brown Fibrous Homogeneous	9002, Issue 2 ¹	9/28/2004	9/30/2004	ND	NA
BR-23000	B0061	Brown, Black Fibrous Homogeneous	9002, Issue 2 ¹	10/5/2004	10/6/2004	ND	NA
BR-24000	B0061	Brown, Black Fibrous Homogeneous	9002, Issue 2 ¹	10/5/2004	10/6/2004	ND	NA
BR-25000	B0062	Brown, Black Fibrous Homogeneous	9002, Issue 2 ¹	10/5/2004	10/6/2004	ND	NA
BR-26000	B0062	Brown, Black Fibrous Homogeneous	9002, Issue 2 ¹	10/6/2004	10/6/2004	ND	NA
BR-27000	B0063	Brown, Black Fibrous Homogeneous	9002, Issue 2 ¹	10/5/2004	10/6/2004	ND	NA
BR-28000	B0078	Brown Fibrous Homogeneous	9002, Issue 2 ¹	10/6/2004	10/7/2004	ND	NA
BR-29000	B0078	Brown Fibrous Homogeneous	9002, Issue 2 ¹	10/6/2004	10/7/2004	<1%	Tremolite/Actinolite
BR-29001	B0078	Brown Fibrous Homogeneous	9002, Issue 2 ¹	10/6/2004	10/11/2004	<1%	Tremolite/Actinolite
BX-29001	B0103	Tan Fibrous Homogeneous	9002, Issue 2 ¹	10/19/2004	10/20/2004	ND	NA
BR-29002	B0078	Brown Fibrous Homogeneous	9002, Issue 2 ¹	10/6/2004	10/11/2004	ND	NA
BR-29003	B0078	Brown Fibrous Homogeneous	9002, Issue 2 ¹	10/6/2004	10/11/2004	ND	NA
BR-29004	B0078	Brown Fibrous Homogeneous	9002, Issue 2 ¹	10/6/2004	10/11/2004	ND	NA
BR-30000	B0078	Brown Fibrous Homogeneous	9002, Issue 2 ¹	10/6/2004	10/7/2004	<1%	Tremolite/Actinolite
BR-30001	B0079	Brown Fibrous Homogeneous	9002, Issue 2 ¹	10/6/2004	10/11/2004	<1%	Tremolite/Actinolite
BR-30002	B0079	Brown Fibrous Homogeneous	9002, Issue 2 ¹	10/6/2004	10/11/2004	<1%	Tremolite/Actinolite
BR-30003	B0079	Brown Fibrous Homogeneous	9002, Issue 2 ¹	10/6/2004	10/11/2004	<1%	Tremolite/Actinolite
BR-30004	B0079	Brown Fibrous Homogeneous	9002, Issue 2 ¹	10/6/2004	10/11/2004	<1%	Tremolite/Actinolite
BR-30005	B0079	Brown Fibrous Homogeneous	9002, Issue 2 ¹	10/6/2004	10/11/2004	<1%	Tremolite/Actinolite
BX-30000	B0103	Tan Fibrous Homogeneous	9002, Issue 2 ¹	10/19/2004	10/20/2004	ND	NA
BR-31000	B0080	Brown Fibrous Homogeneous	9002, Issue 2 ¹	10/11/2004	10/12/2004	ND	NA
BR-32000	B0080	Brown Fibrous Homogeneous	9002, Issue 2 ¹	10/11/2004	10/12/2004	<1%	Tremolite/Actinolite
BX-32000	B0109	Tan Fibrous Homogeneous	9002, Issue 2 ¹	10/20/2004	10/21/2004	ND	NA
BR-33000	B0081	Brown Fibrous Homogeneous	9002, Issue 2 ¹	10/11/2004	10/12/2004	ND	NA
BR-34000	B0081	Brown Fibrous Homogeneous	9002, Issue 2 ¹	10/11/2004	10/12/2004	ND	NA

Table D-2
Clearance Soil Samples
BNSF Libby Railway Response Action 2004

Sample ID	COC Number	Appearance	Analytical Method	Date Collected	Date Analyzed	Asbestos Percentage	Asbestos Type
BR-35000	B0082	Beige Fibrous Homogeneous	9002, Issue 2 ¹	10/11/2004	10/12/2004	ND	NA
BR-36000	B0082	Beige Fibrous Homogeneous	9002, Issue 2 ¹	10/11/2004	10/12/2004	ND	NA
BR-37000	B0083	Brown Fibrous Homogeneous	9002, Issue 2 ¹	10/13/2004	10/13/2004	ND	NA
BR-38000	B0083	Brown Fibrous Homogeneous	9002, Issue 2 ¹	10/13/2004	10/13/2004	ND	ND
BR-39000	B0084	Brown Fibrous Homogeneous	9002, Issue 2 ¹	10/13/2004	10/13/2004	ND	NA
BR-40000	B0084	Brown Fibrous Homogeneous	9002, Issue 2 ¹	10/13/2004	10/13/2004	ND	NA
BR-41000	B0085	Brown Fibrous Homogeneous	9002, Issue 2 ¹	10/13/2004	10/13/2004	<1%	Tremolite/Actinolite
BX-41000	B0098	Brown Fibrous Homogeneous	9002, Issue 2 ¹	10/15/2004	10/15/2004	<1%	Tremolite/Actinolite
BY-41000	B0108	Tan Fibrous Homogeneous	9002, Issue 2 ¹	10/19/2004	10/20/2004	ND	NA
BR-42000	B0086	Brown Fibrous Homogeneous	9002, Issue 2 ¹	10/14/2004	10/14/2004	ND	NA
BR-43000	B0086	Brown Fibrous Homogeneous	9002, Issue 2 ¹	10/14/2004	10/14/2004	ND	NA
BR-44000	B0087	Brown Fibrous Homogeneous	9002, Issue 2 ¹	10/14/2004	10/14/2004	ND	NA
BR-45000	B0088	Tan Fibrous Homogeneous	9002, Issue 2 ¹	10/15/2004	10/15/2004	ND	NA
BR-46000	B0088	Tan Fibrous Homogeneous	9002, Issue 2 ¹	10/15/2004	10/15/2004	ND	NA
BR-47000	B0098	Brown Fibrous Homogeneous	9002, Issue 2 ¹	10/15/2004	10/15/2004	ND	NA
BR-48000 ²	B0109	Tan Fibrous Homogeneous	9002, Issue 2 ¹	10/20/2004	10/21/2004	ND	NA

¹ NIOSH Method 9002, Issue 2

² Sample BR-48000 was reported by the laboratory to be BX-48000. EMR has notified the laboratory of the error and requested a revised report.

ND- Not detected

NA- Not applicable

Table D-3
TEM Air Monitoring Samples
BNSF Libby Railyard Response Action 2004

Sample ID	Analytical Method	Sample Collection Date	Sample Analysis Date	COC Number	Asbestos Type	Structures $\geq 0.5 \mu$	Structure $\leq 0.5 \mu$	Volume (Liters)	S/mm ²	S/cc
BN-00135	TEM	9/3/2004	9/7/2004	B0001	NA	ND	ND	1560	<19.00	<0.0047
BN-00136	TEM	9/3/2004	9/7/2004	B0001	NA	ND	ND	1537	<19.00	<0.0048
BN-00137	TEM	9/3/2004	9/7/2004	B0001	NA	ND	ND	1486	<15.00	<0.0040
BN-00138	TEM	9/3/2004	9/7/2004	B0001	NA	ND	ND	1541	<19.00	<0.0048
BN-00139	TEM	9/3/2004	9/7/2004	B0001	NA	ND	ND	1338	<15.00	<0.0044
BN-00140	TEM	9/3/2004	9/7/2004	B0001	NA	ND	ND	1650	<19.00	<0.0045
BN-00101	TEM	9/3/2004	9/7/2004	B0001	NA	ND	ND	730	<8.50	<0.0045
BN-00093	TEM	9/2/2004	9/7/2004	B0002	NA	ND	ND	672	<8.50	<0.0049
BN-00092	TEM	9/2/2004	9/7/2004	B0002	NA	ND	ND	526	<7.70	<0.0056
BN-00091	TEM	9/2/2004	9/7/2004	B0002	NA	ND	ND	590	<7.70	<0.0050
BN-00090	TEM	9/2/2004	9/7/2004	B0002	NA	ND	ND	1246	<15.00	<0.0048
BN-00089	TEM	9/2/2004	9/7/2004	B0002	NA	ND	ND	476	<7.70	<0.0062
BN-00083	TEM	9/1/2004	9/8/2004	B0003	NA	ND	ND	1011	<13.00	<0.0049
BN-00084	TEM	9/1/2004	9/8/2004	B0003	NA	ND	ND	1536	<19.00	<0.0048
BN-00085	TEM	9/1/2004	9/8/2004	B0003	NA	ND	ND	957	<11.00	<0.0044
BN-00086	TEM	9/1/2004	9/8/2004	B0003	NA	ND	ND	1018	<13.00	<0.0048
BN-00087	TEM	9/1/2004	9/8/2004	B0003	NA	ND	ND	1526	<15.00	<0.0039
BN-00142	TEM	9/7/2004	9/8/2004	B0004	NA	ND	ND	2227	<19.00	<0.0033
BN-00143	TEM	9/7/2004	9/8/2004	B0004	NA	ND	ND	2254	<19.00	<0.0033
BN-00144	TEM	9/7/2004	9/8/2004	B0004	NA	ND	ND	2507	<19.00	<0.0030
BN-00145	TEM	9/7/2004	9/8/2004	B0004	NA	ND	ND	2185	<19.00	<0.0034
BN-00146	TEM	9/7/2004	9/8/2004	B0004	NA	ND	ND	2606	<19.00	<0.0028
BN-00147	TEM	9/7/2004	9/8/2004	B0004	NA	ND	ND	2223	<19.00	<0.0033
BN-00154	TEM	9/8/2004	9/9/2004	B0005	NA	ND	ND	2079	<19.00	<0.0036
BN-00155	TEM	9/8/2004	9/9/2004	B0005	NA	ND	ND	2212	<19.00	<0.0033
BN-00156	TEM	9/8/2004	9/9/2004	B0005	NA	ND	ND	2109	<19.00	<0.0035
BN-00157	TEM	9/8/2004	9/9/2004	B0005	NA	ND	ND	2088	<19.00	<0.0035
BN-00158	TEM	9/8/2004	9/9/2004	B0005	NA	ND	ND	1965	<19.00	<0.0038
BN-00159	TEM	9/8/2004	9/9/2004	B0005	NA	ND	ND	1902	<19.00	<0.0039
BN-00160	TEM	9/9/2004	9/11/2004	B0008	NA	ND	ND	2238	<19.00	<0.0033
BN-00161	TEM	9/9/2004	9/11/2004	B0008	NA	ND	ND	2200	<19.00	<0.0034
BN-00162	TEM	9/9/2004	9/11/2004	B0008	NA	ND	ND	2234	<19.00	<0.0033
BN-00163	TEM	9/9/2004	9/11/2004	B0008	NA	ND	ND	2146	<19.00	<0.0035
BN-00164	TEM	9/9/2004	9/11/2004	B0008	NA	ND	ND	2382	<19.00	<0.0031
BN-00165	TEM	9/9/2004	9/11/2004	B0008	NA	ND	ND	2196	<19.00	<0.0034
BN-00166	TEM	9/9/2004	9/11/2004	B0008	NA	ND	ND	2236	<19.00	<0.0033
BN-00173	TEM	9/10/2004	9/11/2004	B0009	NA	ND	ND	2101	<19.00	<0.0035

Table D-3

**TEM Air Monitoring Samples
BNSF Libby Railyard Response Action 2004**

Sample ID	Analytical Method	Sample Collection Date	Sample Analysis Date	COC Number	Asbestos Type	Structures $\geq 0.5 \mu < 5$	Structure Volume $\geq 0.5 \mu$ (Liters)	S/mm ²	S/cc	
BN-00174	TEM	9/10/2004	9/11/2004	B0009	NA	ND	ND	2077	<19.00	<0.0036
BN-00175	TEM	9/10/2004	9/11/2004	B0009	NA	ND	ND	2100	<19.00	<0.0035
BN-00176	TEM	9/10/2004	9/11/2004	B0009	NA	ND	ND	1943	<19.00	<0.0038
BN-00177	TEM	9/10/2004	9/11/2004	B0009	NA	ND	ND	1995	<19.00	<0.0037
BN-00178	TEM	9/10/2004	9/11/2004	B0009	NA	ND	ND	1934	<19.00	<0.0038
BN-00179	TEM	9/10/2004	9/11/2004	B0009	NA	ND	ND	2008	<19.00	<0.0037
BN-00180	TEM	9/10/2004	9/11/2004	B0009	NA	ND	ND	819	<9.60	<0.0045
BN-00181	TEM	9/11/2004	9/12/2004	B0010	NA	ND	ND	1894	<19.00	<0.0039
BN-00182	TEM	9/11/2004	9/12/2004	B0010	NA	ND	ND	2253	<19.00	<0.0033
BN-00183	TEM	9/11/2004	9/12/2004	B0010	NA	ND	ND	1858	<19.00	<0.0040
BN-00184	TEM	9/11/2004	9/12/2004	B0010	NA	ND	ND	1546	<19.00	<0.0036
BN-00185	TEM	9/11/2004	9/12/2004	B0010	NA	ND	ND	1190	<13.00	<0.0041
BN-00186	TEM	9/11/2004	9/12/2004	B0010	NA	ND	ND	1794	<19.00	<0.0041
BN-00187	TEM	9/11/2004	9/12/2004	B0010	NA	ND	ND	1045	<13.00	<0.0047
BN-00188	TEM	9/11/2004	9/12/2004	B0010	NA	ND	ND	1919	<19.00	<0.0039
BN-00170	TEM	9/10/2004	9/14/2004	B0011	NA	ND	ND	1230	<15.00	<0.0048
BN-00194	TEM	9/12/2004	9/14/2004	B0011	NA	ND	ND	1112	<13.00	<0.0044
BN-00195	TEM	9/12/2004	9/14/2004	B0011	NA	ND	ND	1159	<13.00	<0.0043
BN-00196	TEM	9/12/2004	9/14/2004	B0011	NA	ND	ND	1087	<13.00	<0.0045
BN-00197	TEM	9/12/2004	9/14/2004	B0011	NA	ND	ND	1091	<13.00	<0.0045
BN-00198	TEM	9/12/2004	9/14/2004	B0011	NA	ND	ND	1223	<15.00	<0.0048
BN-00199	TEM	9/12/2004	9/14/2004	B0011	NA	ND	ND	772	<9.60	<0.0048
BN-00200	TEM	9/13/2004	9/14/2004	B0012	NA	ND	ND	1969	<19.00	<0.0038
BN-00201	TEM	9/13/2004	9/14/2004	B0012	NA	ND	ND	2285	<19.00	<0.0032
BN-00202	TEM	9/13/2004	9/14/2004	B0012	NA	ND	ND	1364	<15.00	<0.0043
BN-00203	TEM	9/13/2004	9/14/2004	B0012	NA	ND	ND	2244	<19.00	<0.0033
BN-00204	TEM	9/13/2004	9/14/2004	B0012	NA	ND	ND	1976	<19.00	<0.0037
BN-00205	TEM	9/13/2004	9/14/2004	B0012	NA	ND	ND	2022	<19.00	<0.0037
BN-00206	TEM	9/13/2004	9/14/2004	B0012	NA	ND	ND	1999	<19.00	<0.0037
BN-00213	TEM	9/14/2004	9/15/2004	B0014	NA	ND	ND	1907	<19.00	<0.0039
BN-00214	TEM	9/14/2004	9/15/2004	B0014	NA	ND	ND	828	<9.60	<0.0045
BN-00215	TEM	9/14/2004	9/15/2004	B0014	NA	ND	ND	2210	<19.00	<0.0034
BN-00216	TEM	9/14/2004	9/15/2004	B0014	NA	ND	ND	1938	<19.00	<0.0038
BN-00217	TEM	9/14/2004	9/15/2004	B0014	NA	ND	ND	913	<11.00	<0.0046
BN-00218	TEM	9/14/2004	9/15/2004	B0014	NA	ND	ND	1881	<19.00	<0.0039
BN-00219	TEM	9/15/2004	9/16/2004	B0017	NA	ND	ND	1659	<19.00	<0.0045
BN-00220	TEM	9/15/2004	9/16/2004	B0017	NA	ND	ND	2399	<19.00	<0.0031

Table D-3

**TEM Air Monitoring Samples
BNSF Libby Railyard Response Action 2004**

Sample ID	Analytical Method	Sample Collection Date	Sample Analysis Date	COC Number	Asbestos Type	Structures $\geq 0.5 \mu < 5$	Structure Volume $\geq 0.5 \mu$ (Liters)	S/mm ²	S/cc	
BN-00221	TEM	9/15/2004	9/16/2004	B0017	NA	ND	ND	2162	<19.00	<0.0034
BN-00222	TEM	9/15/2004	9/16/2004	B0017	NA	ND	ND	1272	<15.00	<0.0047
BN-00223	TEM	9/15/2004	9/16/2004	B0017	NA	ND	ND	2054	<19.00	<0.0036
BN-00224	TEM	9/15/2004	9/16/2004	B0017	NA	ND	ND	1843	<19.00	<0.0040
BN-00225	TEM	9/15/2004	9/16/2004	B0017	NA	ND	ND	900	<11.00	<0.0047
BN-00231	TEM	9/16/2004	9/17/2004	B0018	NA	ND	ND	1280	<15.00	<0.0046
BN-00232	TEM	9/16/2004	9/17/2004	B0018	NA	ND	ND	1529	<15.00	<0.0040
BN-00233	TEM	9/16/2004	9/17/2004	B0018	NA	ND	ND	2033	<19.00	<0.0036
BN-00234	TEM	9/16/2004	9/17/2004	B0018	NA	ND	ND	1221	<15.00	<0.0049
BN-00235	TEM	9/16/2004	9/17/2004	B0018	NA	ND	ND	1980	<19.00	<0.0037
BN-00236	TEM	9/16/2004	9/17/2004	B0018	NA	ND	ND	2083	<19.00	<0.0036
BN-00237	TEM	9/16/2004	9/17/2004	B0018	NA	ND	ND	2008	<19.00	<0.0037
BN-00238	TEM	9/16/2004	9/17/2004	B0018	NA	ND	ND	864	<11.00	<0.0049
BN-00239	TEM	9/17/2004	9/19/2004	B0019	NA	ND	ND	1378	<15.00	<0.0043
BN-00240	TEM	9/17/2004	9/19/2004	B0019	NA	ND	ND	2387	<19.00	<0.0031
BN-00241	TEM	9/17/2004	9/19/2004	B0019	NA	ND	ND	1349	<15.00	<0.0044
BN-00242	TEM	9/17/2004	9/19/2004	B0019	NA	ND	ND	1323	<15.00	<0.0045
BN-00243	TEM	9/17/2004	9/19/2004	B0019	NA	ND	ND	2014	<19.00	<0.0037
BN-00244	TEM	9/17/2004	9/19/2004	B0019	NA	ND	ND	1961	<19.00	<0.0038
BN-00245	TEM	9/17/2004	9/19/2004	B0019	NA	ND	ND	1290	<15.00	<0.0046
BN-00250	TEM	9/18/2004	9/20/2004	B0020	NA	ND	ND	1261	<15.00	<0.0047
BN-00251	TEM	9/18/2004	9/20/2004	B0020	NA	ND	ND	1052	<13.00	<0.0047
BN-00252	TEM	9/18/2004	9/20/2004	B0020	NA	ND	ND	1790	<19.00	<0.0041
BN-00253	TEM	9/18/2004	9/20/2004	B0020	NA	ND	ND	1724	<19.00	<0.0043
BN-00254	TEM	9/18/2004	9/20/2004	B0020	NA	ND	ND	1301	<15.00	<0.0046
BN-00255	TEM	9/18/2004	9/20/2004	B0020	NA	ND	ND	915	<11.00	<0.0046
BN-00257	TEM	9/20/2004	9/22/2004	B0024	NA	ND	ND	1526	<19.00	<0.0049
BN-00258	TEM	9/20/2004	9/22/2004	B0024	NA	ND	ND	1511	<19.00	<0.0049
BN-00259	TEM	9/20/2004	9/22/2004	B0024	NA	ND	ND	2020	<19.00	<0.0037
BN-00260	TEM	9/20/2004	9/22/2004	B0024	NA	ND	ND	1151	<13.00	<0.0043
BN-00261	TEM	9/20/2004	9/22/2004	B0024	NA	ND	ND	1984	<19.00	<0.0037
BN-00262	TEM	9/20/2004	9/22/2004	B0024	NA	ND	ND	1094	<13.00	<0.0045
BN-00264	TEM	9/20/2004	9/22/2004	B0024	NA	ND	ND	1405	<15.00	<0.0042
BN-00266	TEM	9/21/2004	9/23/2004	B0025	NA	ND	ND	1495	<15.00	<0.0040
BN-00267	TEM	9/21/2004	9/23/2004	B0025	NA	ND	ND	1196	<15.00	<0.0050
BN-00268	TEM	9/21/2004	9/23/2004	B0025	NA	ND	ND	848	<9.60	<0.0044
BN-00269	TEM	9/21/2004	9/23/2004	B0025	NA	ND	ND	1186	<13.00	<0.0042

Table D-3

**TEM Air Monitoring Samples
BNSF Libby Railyard Response Action 2004**

Sample ID	Analytical Method	Sample Collection Date	Sample Analysis Date	COC Number	Asbestos Type	Structures $\geq 0.5 \mu < 5$	Structure s $\geq 0.5 \mu$	Volume (Liters)	S/mm ²	S/cc
BN-00270	TEM	9/21/2004	9/23/2004	B0025	NA	ND	ND	1665	<19.00	<0.0044
BN-00271	TEM	9/21/2004	9/23/2004	B0025	NA	ND	ND	2057	<19.00	<0.0036
BN-00272	TEM	9/21/2004	9/23/2004	B0025	NA	ND	ND	1240	<15.00	<0.0048
BN-00275	TEM	9/21/2004	10/11/2004	B0076	overloaded	ND	ND	NA	NA	NA
BN-00275	TEM	9/21/2004	10/12/2004	B0076	NA	ND	ND	1358	<51.75	<0.0147
BN-00278	TEM	9/22/2004	10/11/2004	B0076	NA	ND	ND	1385	<15.00	<0.0043
BN-00279	TEM	9/22/2004	9/24/2004	B0031	NA	ND	ND	1375	<15.00	<0.0043
BN-00280	TEM	9/22/2004	9/24/2004	B0031	NA	ND	ND	1318	<15.00	<0.0045
BN-00281	TEM	9/22/2004	9/24/2004	B0031	NA	ND	ND	1202	<15.00	<0.0049
BN-00282	TEM	9/22/2004	9/24/2004	B0031	NA	ND	ND	1229	<15.00	<0.0048
BN-00283	TEM	9/22/2004	9/24/2004	B0031	NA	ND	ND	1902	<19.00	<0.0039
BN-00284	TEM	9/23/2004	9/24/2004	B0033	NA	ND	ND	1471	<15.00	<0.0040
BN-00285	TEM	9/23/2004	9/24/2004	B0033	NA	ND	ND	1403	<15.00	<0.0042
BN-00286	TEM	9/23/2004	9/24/2004	B0033	NA	ND	ND	1229	<15.00	<0.0048
BN-00287	TEM	9/23/2004	9/24/2004	B0033	NA	ND	ND	1138	<13.00	<0.0043
BN-00288	TEM	9/23/2004	9/24/2004	B0033	NA	ND	ND	1021	<13.00	<0.0048
BN-00293	TEM	9/24/2004	9/28/2004	B0032	L. Amphibole	ND	1	1118	13.00	0.0044
BN-00294	TEM	9/24/2004	9/28/2004	B0032	NA	ND	ND	1277	<15.00	<0.0046
BN-00295	TEM	9/24/2004	9/28/2004	B0032	NA	ND	ND	2290	<19.00	<0.0032
BN-00296	TEM	9/24/2004	9/28/2004	B0032	L. Amphibole	ND	1	1408	15.00	0.0042
BN-00297	TEM	9/24/2004	9/28/2004	B0032	NA	ND	ND	1730	<19.00	<0.0043
BN-00298	TEM	9/24/2004	9/28/2004	B0032	L. Amphibole	2	1	1193	38.00	0.0120
BN-00299	TEM	9/24/2004	9/28/2004	B0032	NA	ND	ND	1990	<19.00	<0.0037
BN-00300	TEM	9/25/2004	9/28/2004	B0046	NA	ND	ND	1158	<13.00	<0.0043
BN-00301	TEM	9/25/2004	9/28/2004	B0046	L. Amphibole	ND	2	1148	26.00	0.0086
BN-00303	TEM	9/25/2004	9/28/2004	B0046	NA	ND	ND	1544	<19.00	<0.0048
BN-00303	TEM	9/25/2004	9/28/2004	B0046	NA	ND	ND	1717	<19.00	<0.0043
BN-00304	TEM	9/25/2004	9/28/2004	B0046	NA	ND	ND	1164	<13.00	<0.0042
BN-00305	TEM	9/25/2004	9/28/2004	B0046	NA	ND	ND	1178	<13.00	<0.0042
BN-00306	TEM	9/25/2004	9/28/2004	B0046	NA	ND	ND	2431	<19.00	<0.0030
BN-00307	TEM	9/25/2004	9/28/2004	B0046	NA	ND	ND	2110	<19.00	<0.0035
BN-00308	TEM	9/27/2004	9/28/2004	B0045	NA	ND	ND	1539	<19.00	<0.0048
BN-00310	TEM	9/27/2004	9/28/2004	B0045	NA	ND	ND	1453	<15.00	<0.0041
BN-00311	TEM	9/27/2004	9/28/2004	B0045	NA	ND	ND	1791	<19.00	<0.0041
BN-00312	TEM	9/27/2004	9/28/2004	B0045	NA	ND	ND	1655	<19.00	<0.0045
BN-00313	TEM	9/27/2004	9/28/2004	B0045	NA	ND	ND	2124	<19.00	<0.0036
BN-00314	TEM	9/27/2004	9/28/2004	B0045	NA	ND	ND	2200	<19.00	<0.0034

Table D-3

**TEM Air Monitoring Samples
BNSF Libby Railyard Response Action 2004**

Sample ID	Analytical Method	Sample Collection Date	Sample Analysis Date	COC Number	Asbestos Type	Structures $\geq 0.5 \mu < 5$	Structure s $\geq 0.5 \mu$	Volume (Liters)	S/mm ²	S/cc
BN-00315	TEM	9/27/2004	9/28/2004	B0045	NA	ND	ND	2813	<19.00	<0.0026
BN-00316	TEM	9/28/2004	9/30/2004	B0047	NA	ND	ND	1840	<19.00	<0.0040
BN-00318	TEM	9/28/2004	9/30/2004	B0047	L. Amphibole	ND	1	1641	19.00	0.0045
BN-00319	TEM	9/28/2004	9/30/2004	B0047	NA	ND	ND	1478	<15.00	<0.0040
BN-00320	TEM	9/28/2004	9/30/2004	B0047	NA	ND	ND	3660	<19.00	<0.0020
BN-00321	TEM	9/28/2004	9/30/2004	B0047	NA	ND	ND	2288	<19.00	<0.0032
BN-00322	TEM	9/28/2004	9/30/2004	B0047	NA	ND	ND	4283	<19.00	<0.0017
BN-00323	TEM	9/28/2004	9/30/2004	B0047	NA	ND	ND	1534	<19.00	<0.0048
BN-00327	TEM	9/29/2004	9/30/2004	B0052	NA	ND	ND	1598	<19.00	<0.0046
BN-00328	TEM	9/29/2004	9/30/2004	B0052	NA	ND	ND	1163	<13.00	<0.0042
BN-00329	TEM	9/29/2004	9/30/2004	B0052	NA	ND	ND	2411	<19.00	<0.0031
BN-00330	TEM	9/29/2004	9/30/2004	B0052	NA	ND	ND	3969	<19.00	<0.0019
BN-00331	TEM	9/29/2004	9/30/2004	B0052	NA	ND	ND	3983	<19.00	<0.0019
BN-00335	TEM	9/30/2004	10/1/2004	B0054	NA	ND	ND	1373	<15.00	<0.0043
BN-00336	TEM	9/30/2004	10/1/2004	B0054	NA	ND	ND	4275	<19.00	<0.0017
BN-00337	TEM	9/30/2004	10/1/2004	B0054	NA	ND	ND	1404	<15.00	<0.0042
BN-00338	TEM	9/30/2004	10/1/2004	B0054	NA	ND	ND	1998	<19.00	<0.0037
BN-00339	TEM	9/30/2004	10/1/2004	B0054	NA	ND	ND	3801	<19.00	<0.0019
BN-00340	TEM	10/1/2004	10/6/2004	B0035	NA	ND	ND	1518	<19.00	<0.0049
BN-00343	TEM	10/1/2004	10/5/2004	B0056	NA	ND	ND	1635	<19.00	<0.0045
BN-00344	TEM	10/1/2004	10/5/2004	B0056	NA	ND	ND	1438	<15.00	<0.0041
BN-00345	TEM	10/1/2004	10/5/2004	B0056	NA	ND	ND	3276	<19.00	<0.0023
BN-00346	TEM	10/1/2004	10/5/2004	B0056	NA	ND	ND	1667	<19.00	<0.0044
BN-00347	TEM	10/1/2004	10/5/2004	B0056	L. Amphibole	ND	1	3600	19.00	0.0021
BN-00350	TEM	10/2/2004	10/5/2004	B0058	NA	ND	ND	1680	<19.00	<0.0044
BN-00351	TEM	10/2/2004	10/5/2004	B0058	NA	ND	ND	1308	<15.00	<0.0045
BN-00352	TEM	10/2/2004	10/5/2004	B0058	NA	ND	ND	2600	<19.00	<0.0028
BN-00353	TEM	10/2/2004	10/5/2004	B0058	NA	ND	ND	3885	<19.00	<0.0019
BN-00354	TEM	10/2/2004	10/5/2004	B0058	NA	ND	ND	1803	<19.00	<0.0041
BN-00355	TEM	10/4/2004	10/5/2004	B0043	NA	ND	ND	2157	<19.00	<0.0034
BN-00356	TEM	10/4/2004	10/5/2004	B0043	NA	ND	ND	1346	<15.00	<0.0044
BN-00357	TEM	10/4/2004	10/5/2004	B0043	NA	ND	ND	1144	<13.00	<0.0043
BN-00358	TEM	10/4/2004	10/5/2004	B0043	NA	ND	ND	1272	<15.00	<0.0047
BN-00359	TEM	10/4/2004	10/5/2004	B0043	NA	ND	ND	1639	<19.00	<0.0045
BN-00360	TEM	10/4/2004	10/5/2004	B0043	NA	ND	ND	1581	<19.00	<0.0047
BN-00361	TEM	10/4/2004	10/5/2004	B0043	NA	ND	ND	1573	<19.00	<0.0047
BN-00362	TEM	10/4/2004	10/6/2004	B0035	NA	ND	ND	1361	<15.00	<0.0044

Table D-3

**TEM Air Monitoring Samples
BNSF Libby Railyard Response Action 2004**

Sample ID	Analytical Method	Sample Collection Date	Sample Analysis Date	COC Number	Asbestos Type	Structures $\geq 0.5 \mu < 5$	Structure s $\geq 0.5 \mu$	Volume (Liters)	S/mm ²	S/cc
BN-00367	TEM	10/5/2004	10/6/2004	B0035	NA	ND	ND	1300	<15.00	<0.0046
BN-00369	TEM	10/5/2004	10/6/2004	B0035	NA	ND	ND	1172	<13.00	<0.0042
BN-00370	TEM	10/5/2004	10/6/2004	B0035	L. Amphibole	ND	1	1971	19	0.0038
BN-00371	TEM	10/5/2004	10/6/2004	B0035	NA	ND	ND	1835	<19.00	<0.0040
BN-00372	TEM	10/5/2004	10/6/2004	B0035	NA	ND	ND	1845	<19.00	<0.0040
BN-00373	TEM	10/5/2004	10/6/2004	B0035	NA	ND	ND	1808	<19.00	<0.0041
BN-00374	TEM	10/5/2004	10/6/2004	B0035	NA	ND	ND	1196	<13.00	<0.0041
BN-00376	TEM	10/6/2004	10/8/2004	B0067	NA	ND	ND	2097	<19.00	<0.0035
BN-00377	TEM	10/6/2004	10/8/2004	B0067	NA	ND	ND	2053	<19.00	<0.0036
BN-00378	TEM	10/6/2004	10/8/2004	B0067	NA	ND	ND	2058	<19.00	<0.0036
BN-00379	TEM	10/6/2004	10/8/2004	B0067	Tremolite/Actinolite	ND	2	1957	38	0.0076
BN-00380	TEM	10/6/2004	10/8/2004	B0067	NA	ND	ND	1242	<15.00	<0.0048
BN-00382	TEM	10/6/2004	10/8/2004	B0067	NA	ND	ND	1122	<13.00	<0.0044
BN-00388	TEM	10/7/2004	10/9/2004	B0074	NA	ND	ND	1396	<15.00	<0.0042
BN-00389	TEM	10/7/2004	10/9/2004	B0074	NA	ND	ND	1985	<19.00	<0.0037
BN-00390	TEM	10/7/2004	10/9/2004	B0074	NA	ND	ND	1974	<19.00	<0.0037
BN-00391	TEM	10/7/2004	10/9/2004	B0074	NA	ND	ND	1967	<19.00	<0.0038
BN-00392	TEM	10/7/2004	10/9/2004	B0074	NA	ND	ND	1267	<15.00	<0.0047
BN-00393	TEM	10/7/2004	10/9/2004	B0074	NA	ND	ND	1922	<19.00	<0.0039
BN-00394	TEM	10/7/2004	10/9/2004	B0074	NA	ND	ND	1166	<13.00	<0.0042
BN-00395	TEM	10/8/2004	10/11/2004	B0076	NA	ND	ND	1815	<19.00	<0.0041
BN-00396	TEM	10/8/2004	10/11/2004	B0076	NA	ND	ND	1841	<19.00	<0.0040
BN-00397	TEM	10/8/2004	10/11/2004	B0076	NA	ND	ND	1226	<15.00	<0.0048
BN-00398	TEM	10/8/2004	10/11/2004	B0076	NA	ND	ND	1212	<15.00	<0.0049
BN-00399	TEM	10/8/2004	10/11/2004	B0076	L. Amphibole	1	ND	1873	19	0.0040
BN-00400	TEM	10/8/2004	10/11/2004	B0076	NA	ND	ND	1255	<15.00	<0.0047
BN-00401	TEM	10/8/2004	10/11/2004	B0076	NA	ND	ND	1008	<13.00	<0.0049
BN-00408	TEM	10/11/2004	10/12/2004	B0089	NA	ND	ND	2041	<19.00	<0.0036
BN-00409	TEM	10/11/2004	10/12/2004	B0089	NA	ND	ND	2023	<19.00	<0.0037
BN-00410	TEM	10/11/2004	10/12/2004	B0089	NA	ND	ND	1265	<15.00	<0.0047
BN-00411	TEM	10/11/2004	10/12/2004	B0089	NA	ND	ND	2023	<19.00	<0.0037
BN-00412	TEM	10/11/2004	10/12/2004	B0089	NA	ND	ND	2006	<19.00	<0.0037
BN-00414	TEM	10/11/2004	10/12/2004	B0089	NA	ND	ND	1198	<15.00	<0.0049
BN-00415	TEM	10/11/2004	10/12/2004	B0089	NA	ND	ND	1240	<15.00	<0.0048
BN-00417	TEM	10/12/2004	10/13/2004	B0092	NA	ND	ND	1988	<19.00	<0.0037
BN-00418	TEM	10/12/2004	10/13/2004	B0092	NA	ND	ND	1964	<19.00	<0.0038
BN-00419	TEM	10/12/2004	10/13/2004	B0092	NA	ND	ND	1932	<19.00	<0.0038

Table D-3
TEM Air Monitoring Samples
BNSF Libby Railyard Response Action 2004

Sample ID	Analytical Method	Sample Collection Date	Sample Analysis Date	COC Number	Asbestos Type	Structures $\geq 0.5 \mu < 5$	Structure Volume $\geq 0.5 \mu$ (Liters)	S/mm ²	S/cc	
BN-00420	TEM	10/12/2004	10/13/2004	B0092	NA	ND	ND	1228	<15.00	<0.0048
BN-00421	TEM	10/12/2004	10/13/2004	B0092	NA	ND	ND	1939	<19.00	<0.0038
BN-00422	TEM	10/12/2004	10/13/2004	B0092	NA	ND	ND	1911	<19.00	<0.0039
BN-00427	TEM	10/13/2004	10/14/2004	B0096	NA	ND	ND	1925	<19.00	<0.0038
BN-00428	TEM	10/13/2004	10/14/2004	B0096	NA	ND	ND	1929	<19.00	<0.0038
BN-00429	TEM	10/13/2004	10/14/2004	B0096	NA	ND	ND	1911	<19.00	<0.0039
BN-00430	TEM	10/13/2004	10/14/2004	B0096	NA	ND	ND	1901	<19.00	<0.0039
BN-00431	TEM	10/13/2004	10/14/2004	B0096	NA	ND	ND	1887	<19.00	<0.0039
BN-00432	TEM	10/13/2004	10/14/2004	B0096	NA	ND	ND	1333	<15.00	<0.0044
BN-00435	TEM	10/13/2004	10/14/2004	B0096	NA	ND	ND	1044	<13.00	<0.0047
BN-00437	TEM	10/14/2004	10/16/2004	B0097	NA	ND	ND	1957	<19.00	<0.0038
BN-00438	TEM	10/14/2004	10/16/2004	B0097	NA	ND	ND	1943	<19.00	<0.0038
BN-00439	TEM	10/14/2004	10/16/2004	B0097	NA	ND	ND	1887	<19.00	<0.0039
BN-00440	TEM	10/14/2004	10/16/2004	B0097	NA	ND	ND	1883	<19.00	<0.0039
BN-00441	TEM	10/14/2004	10/16/2004	B0097	NA	ND	ND	1855	<19.00	<0.0039
BN-00442	TEM	10/14/2004	10/18/2004	B0099	NA	ND	ND	1161	<19.00	<.0049
BN-00445	TEM	10/15/2004	10/18/2004	B0099	NA	ND	ND	1505	<15.00	<.0041
BN-00446	TEM	10/15/2004	10/18/2004	B0099	NA	ND	ND	1453	<15.00	<.0040
BN-00447	TEM	10/15/2004	10/18/2004	B0099	NA	ND	ND	1495	<15.00	<.0040
BN-00448	TEM	10/15/2004	10/18/2004	B0099	NA	ND	ND	1491	<15.00	<.0040
BN-00449	TEM	10/15/2004	10/18/2004	B0099	NA	ND	ND	1484	<11.00	<.0043
BN-00452	TEM	10/15/2004	10/18/2004	B0099	NA	ND	ND	991	<13.00	<.0043
BN-00454	TEM	10/18/2004	10/20/2004	B0106	NA	ND	ND	1624	<19.00	<.0046
BN-00455	TEM	10/18/2004	10/20/2004	B0106	NA	ND	ND	1624	<19.00	<.0046
BN-00456	TEM	10/18/2004	10/20/2004	B0106	NA	ND	ND	1628	<19.00	<.0045
BN-00459	TEM	10/19/2004	10/21/2004	B0110	NA	ND	ND	575	<7.70	<.0052
BN-00462	TEM	10/19/2004	10/21/2004	B0110	NA	ND	ND	1726	<19.00	<.0043
BN-00463	TEM	10/19/2004	10/21/2004	B0110	NA	ND	ND	1845	<19.00	<.0040
BN-00464	TEM	10/19/2004	10/21/2004	B0110	NA	ND	ND	1677	<19.00	<.0044
BN-00465	TEM	10/19/2004	10/21/2004	B0110	NA	ND	ND	1589	<19.00	<.0047
BN-00466	TEM	10/19/2004	10/21/2004	B0110	NA	ND	ND	1579	<19.00	<.0047
BN-00470	TEM	10/20/2004	10/22/2004	B0112	NA	ND	ND	1736	<19.00	<.0043
BN-00471	TEM	10/20/2004	10/22/2004	B0112	NA	ND	ND	1740	<19.00	<.0043
BN-00472	TEM	10/20/2004	10/22/2004	B0112	NA	ND	ND	1719	<19.00	<.0043
BN-00473	TEM	10/20/2004	10/22/2004	B0112	NA	ND	ND	1502	<19.00	<.0049
BN-00478	TEM	10/20/2004	10/22/2004	B0112	NA	ND	ND	872	<11.00	<.0049
BN-00479	TEM	10/20/2004	10/22/2004	B0112	NA	ND	ND	865	<11.00	<.0049

Table D-3

**TEM Air Monitoring Samples
BNSF Libby Railyard Response Action 2004**

Sample ID	Analytical Method	Sample Collection Date	Sample Analysis Date	COC Number	Asbestos Type	Structures $\geq 0.5 \mu < 5$	Structure s $\geq 0.5 \mu$	Volume (Liters)	S/mm ²	S/cc
BN-00480	TEM	10/21/2004	10/23/2004	B0114	L. Amphibole	ND	1	1205	15	0.0049

ND - Not Detected above Method Detection Limits

NA- Not Available/ Not Applicable

S - Structures

cc - Cubic Centimeter

mm - Millimeter

Table D-4
Personal Air Monitoring Samples
BNSF Libby Railyard Response Action 2004

Sample ID	Type	Sample Collection Date	Sample Analysis Date	COC Number	Number of Fibers	Volume (Liters)	F/ mm ²	F/cc
BN-00133	PCM	7/13/2004	7/21/2004	NA	4	425	<7.0	0.006
BN-00134	PCM	7/13/2004	7/21/2004	NA	2.5	75	<7.0	0.036
BN-00135	PCM	7/13/2004	7/21/2004	NA	4.5	300	<7.0	0.009
BN-00138	PCM	7/14/2004	7/21/2004	NA	8	300	10.2	0.013
BN-00139	PCM	7/14/2004	7/21/2004	NA	1.5	75	<7.0	0.036
BN-00293	PCM	9/24/2004	10/2/2004	B0032	12.5	1118	15.9	0.005
BN-00301	PCM	9/25/2004	10/2/2004	B0046	<5.5	1148	<7.0	<.002
BN-00318	PCM	9/28/2004	10/2/2004	B0047	19.5	1641	24.8	0.006
BN-00324	PCM	9/29/2004	9/30/2004	B0048	13.5	1341	17.2	0.005
BN-00326	PCM	9/29/2004	9/30/2004	B0048	7	1334	8.92	0.003
BN-00332	PCM	9/30/2004	10/2/2004	B0053	9.5	848	12.1	0.005
BN-00334	PCM	9/30/2004	10/2/2004	B0053	<5.5	1217	<7.0	<.002

Table D-5
Soil Disposal Criteria Sampling
BNSF Libby Railway Response Action 2004

Location Identifier	Sample ID	Date Sampled	Date Analyzed	NWTPH-Gx	NWTPH-Dx		Total Metals								Volatile Organic Compounds EPA 8260B			
				Gasoline Range Hydrocarbons	Diesel Range Hydrocarbons	Lube Oil Range Hydrocarbons	Silver	Arsenic	Barium	Cadmium	Chromium	Mercury	Lead	Selenium	Naphthalene	Toluene	1,2,4 Trimethylbenzene	Xylenes
T1-EO-100	B2J0694-01	10/26/2002	10/30/2002	ND	494	1720	20.7	50.1	337	13.8	176	ND	411	ND	NA	NA	NA	NA
T2-EO-200	B2J0694-06	10/26/2002	10/30/2002	10.3	672	2040	3.11	14.4	296	3.28	44.2	ND	313	ND	1.41	0.267	0.128	0.507
T3-EO-300	B2J0694-11	10/26/2002	10/30/2002	ND	190	576	51.1	18.9	140	21.9	42.5	ND	609	ND	NA	NA	NA	NA
T4-EO-400	B2J0694-16	10/26/2002	10/30/2002	ND	326	1510	7.7	3.11	120	0.903	14.4	ND	47	ND	1.1	ND	ND	ND
T2-WO-200	B2J0694-21	10/26/2002	10/30/2002	ND	162	582	1.43	12.8	366	2.15	48.1	ND	325	ND	0.588	ND	ND	ND
T3-WO-300	B2J0694-26	10/26/2002	10/30/2002	ND	215	847	2.34	3.16	142	0.561	35.2	ND	32.5	ND	0.142	ND	ND	ND
T4-WO-400	B2J0694-31	10/26/2002	10/30/2002	ND	351	1660	1.33	2.35	167	0.611	11.0	ND	25.5	ND	NA	NA	NA	NA

ND = None Detected

NA = Not Analyzed

Concentrations in milligrams per kilogram (mg/kg)

Table D-6
Railroad Tie Samples
BNSF Libby Railyard Response Action 2004

Sample ID	Appearance	Analytical Method	Date Collected	Date Analyzed	Asbestos Percentage	Asbestos Type
TD-1	Brown	PLM	10/6/2004	10/11/2004	ND	NA
TD-2	Brown	PLM	10/6/2004	10/11/2004	ND	NA
TD-3	Brown	PLM	10/6/2004	10/11/2004	ND	NA
TD-4	Brown	PLM	10/6/2004	10/11/2004	ND	NA
TD-5	Brown	PLM	10/6/2004	10/11/2004	ND	NA
TD-6	Brown	PLM	10/6/2004	10/11/2004	ND	NA
TD-7	Brown	PLM	10/6/2004	10/11/2004	ND	NA
TD-8	Brown	PLM	10/6/2004	10/11/2004	ND	NA
TD-9	Brown	PLM	10/6/2004	10/11/2004	ND	NA
TD-10	Brown	PLM	10/6/2004	10/11/2004	ND	NA
TD-11	Brown	PLM	10/6/2004	10/11/2004	ND	NA
TD-12	Brown	PLM	10/6/2004	10/11/2004	ND	NA
TD-13	Brown	PLM	10/6/2004	10/11/2004	ND	NA
TD-14	Brown	PLM	10/6/2004	10/11/2004	ND	NA
TD-15	Brown	PLM	10/6/2004	10/11/2004	ND	NA
TD-16	Brown	PLM	10/6/2004	10/11/2004	ND	NA
TD-17	Brown	PLM	10/6/2004	10/11/2004	ND	NA
TD-18	Brown	PLM	10/6/2004	10/11/2004	ND	NA
TD-19	Brown	PLM	10/6/2004	10/11/2004	ND	NA
TD-20	Brown	PLM	10/6/2004	10/11/2004	ND	NA
TD-21	Dark Brown	PLM	10/6/2004	10/11/2004	ND	NA
TD-22	Light Brown	PLM	10/6/2004	10/11/2004	ND	NA
TD-23	Dark Brown	PLM	10/6/2004	10/11/2004	ND	NA
TD-24	Dark Brown	PLM	10/6/2004	10/11/2004	ND	NA
TD-25	Light Brown	PLM	10/6/2004	10/11/2004	ND	NA
TD-26	Brown	PLM	10/6/2004	10/11/2004	ND	NA
TD-27	Gray	PLM	10/6/2004	10/11/2004	ND	NA
TD-28	Brown	PLM	10/6/2004	10/11/2004	ND	NA
TD-29	Light Brown	PLM	10/6/2004	10/11/2004	ND	NA
TD-30	Brown	PLM	10/6/2004	10/11/2004	ND	NA
TD-31	Light Tan/Dark Brown	PLM	10/6/2004	10/11/2004	ND	NA
TD-32	Dark Brown	PLM	10/6/2004	10/11/2004	ND	NA
TD-33	Brown	PLM	10/6/2004	10/11/2004	ND	NA
TD-34	Tan	PLM	10/6/2004	10/11/2004	ND	NA
TD-35	Tan/Brown	PLM	10/6/2004	10/11/2004	ND	NA
TD-36	Tan/Brown	PLM	10/6/2004	10/11/2004	ND	NA
TD-37	Tan	PLM	10/6/2004	10/11/2004	ND	NA
TD-38	Tan/Brown	PLM	10/6/2004	10/11/2004	ND	NA
TD-39	Blackish Brown	PLM	10/6/2004	10/11/2004	ND	NA
TD-40	Dark Brown/Tan	PLM	10/6/2004	10/11/2004	ND	NA

ND- Not Detected above method detection limits.

NA- Not applicable.

PLM - Polarized Light Microscopy Method 600.

Samples were analyzed by Analytica Group in Thornton, Colorado.

Samples were ¼-inch diameter cores of railroad ties.

Appendix E

Construction Quality Assurance

Appendix E-1

Soil Compaction Data

Time Departed _____
 Arrived on Site _____
 Departed Site _____
 Arrived Office _____

Mileage Start _____
 Mileage End _____
 Total Mileage _____

HQM Engineering
 PO Box 31318
 Billings MT 59107
 (406) 658-6389

Material Type

FIELD DENSITY TESTS

EB=Embankment Fill

Type Test

Project: LibbySheet No: 2

TB=Trench Backfill

FB=Foundation Backfill

N6=6" Nuclear

Project No: _____

Gauge No: 13P02

RB=Road Base

RE= Roadway Embankment

S6=6" Sandcone

Operator: T. EricksonStandards: AS 2161 MS 598

Test No	Date	Station	Location	CL Offset	Below FG	Mat'l Type	Type Test	Laboratory		Field					Fail (F)	Retest Yes/No	Remarks
								OMC %	Max. Dens.	% Moist	Dry Dens.	Moist Var	% Comp	% Req.			
9	10/4/04	7+50	Track #1	2'	-	RB	NF	6.0	137.7	3.6	134.4	3.4	96.2	95			
10	10/4/04	7+50	Track #1	50'	-	RB	NF	6.0	137.7	4.3	133.0	7.7	95.2	95			
11	10/5/04	3+50	Track #1	2'	-	RB	NF	6.0	139.7	6.0	132.6	-	95.0	95			
12	10/5/04	3+00	"	2'	-	RB	NF	6.0	139.7	5.3	133.3	0.7	95.4	95			
13	10/5/04	2+05	"	2'	-	RB	NF	6.0	139.7	5.4	134.2	0.6	96.0	95			
7R	10/11/04	4+50	Track #1	3'	-	RB	NF	6.0	139.7	3.9	139.2	2.2	91.4	95	F	Y	
6R	10/11/04	5+00	Track #1	2'	-	RB	NF	6.0	139.7	4.4	133.5	7.6	95.6	95		Y	Re-test #6 Pass 2
14	10/11/04	6+00	"	2'	-	RB	NF	6.0	139.7	5.0	135.7	7.0	97.1	95			
15	10/11/04	1+00	"	2'	-	RB	NF	6.0	139.7	5.0	133.1	7.0	95.3	95			
7R	10/11/04	4+50	"	2'	-	RB	NF	6.0	139.7	3.7	134.3	2.3	96.1	95			

Comments: 10/5/04 AS 2119 MS = 603

Approved By: _____

10/11/04 AS = 2169 MS = 604Type of Observation: ☐ Full Time ☐ On Call ☐ Part Time ☐ OtherClient's Representative Advised ☐

Time Departed _____
Arrived on Site _____
Departed Site _____
Arrived Office _____

Mileage Start _____
Mileage End _____
Total Mileage _____

HGA Engineering
PO Box 31318
Billings MT 59107
(406) 850-8300

Material Type

EB=Embankment Fill

TB=Trench Backfill

FB=Foundation Backfill

RB=Road Base

RE= Roadway Embankment

FIELD DENSITY TESTS

Type Test

N6=6" Nuclear

S6=6" Sandcone

Project: L667

Project No: _____

Operator: T. Erickson

Sheet No: 3

Gauge No: 13001

Standards: 2169 1st 604

Test No	Date	Station	Location	CL Offset	Below FG	Mat'l Type	Type Test	Laboratory		Field					Fail (F)	Retest Yes/No	Remarks
								OMC %	Max. Dens.	% Moist	Dry Dens.	Moist Var	% Comp	% Req.			
16	10/11/04	8+50	Track #1	2	-	RD	N _P	6.0	139.7	4.8	139.1	7.2	99.6	95			
17	10/11/04	9+00	Track #1	2	-	RD	N _P	6.0	139.7	5.1	136.4	0.9	97.6	95			
18	10/11/04	9+50	Track #1	2	-	RD	N _P	6.0	139.7	5.8	132.4	0.6	94.8	95	F		
18 _R	10/11/04	9+50	Track #1	2	-	RD	N _P	6.0	139.7	5.3	133.3	0.7	95.4	95		Y	Passed Retest
19	10/11/04	10+00	Track #1	10 ^{ft}	-	RD	N _P	6.0	139.7	5.6	139.5	0.4	99.8	95			
20	10/11/04	10+50	Track #1														Passed but not recorded
21	10/11/04	11+00	Track #1	4 ^{ft}	-	RD	N _P	6.0	139.7	4.8	139.0	7.2	99.5	95			
22	10/11/04	11+50	Track #1	3 ^{ft}	-	RD	N _P	6.0	139.7	4.6	136.1	7.4	97.4	95			
23	10/11/04	12+00	Track #1	2	-	RD	N _P	6.0	139.7	4.5	137.5	7.5	98.4	95			
24	10/11/04	12+50	Track #1	2	-	RD	N _P	6.0	139.7	4.4	134.0	7.6	95.9	95			
25	10/11/04	13+00	Track #1	2	-	RD	N _P	6.0	139.7	4.3	138.6	7.7	99.2	95			

Comments:

Approved By: _____

Type of Observation: ☐ Full Time ☐ On Call ☐ Part Time ☐ Other

Client's Representative Advised ☐

Time Departed _____
 Arrived on Site _____
 Departed Site _____
 Arrived Office _____

Mileage Start _____
 Mileage End _____
 Total Mileage _____

Eng _____
 PO Box 31318
 Billings MT 59107
 (406) 656-6399

Material Type

FIELD DENSITY TESTS

EB=Embankment Fill

Type Test

Project: LiddySheet No: 4

TB=Trench Backfill

FB=Foundation Backfill

N6=6" Nuclear

Project No: _____

Gauge No: 13F02

RB=Road Base

RE=Roadway Embankment

S6=6" Sandcone

Operator: T. EricksonStandards: MS 2169 MS 609

Test No	Date	Station	Location	CL Offset	Below FG	Mat'l Type	Type Test	Laboratory		Field					Fail (F)	Retest Yes/No	Remarks
								OMC %	Max. Dens.	% Moist	Dry Dens.	Moist Var	% Comp	% Req.			
26	10/11/04	13+50	Track #1	6	-	RD	NF	6.0	139.7	4.0	138.5	2.0	99.1	95			
27	10/11/04	14+00	Track #1	6	-	RD	NF	6.0	139.7	3.7	138.3	2.3	99.0	95			
28	10/11/04	14+50	Track #1	6	-	RD	NF	6.0	139.7	4.7	138.6	1.3	99.2	95			
29	10/11/04	15+00	Track #1	6	-	RD	NF	6.0	139.7	4.9	138.7	1.1	99.3	95			
30	10/11/04	15+50	Track #1	6	-	RD	NF	6.0	139.7	5.5	135.4	0.5	96.9	95			
31	10/11/04	16+00	Track #1	2'	-	RD	NF	6.0	139.7	5.0	136.4	1.0	97.6	95			
32	10/12/04	16+50	Track #1	1'	-	RD	NF	6.0	139.7	4.9	136.7	1.1	97.9	95			
34	10/12/04	17+00	Track #1	5'	-	RD	NF	6.0	139.7	4.4	135.3	1.6	96.8	95			
35	10/12/04	17+50	Track #1	10'	-	RD	NF	6.0	139.7	3.6	133.9	2.4	95.7	95			
36	10/12/04	18+00	Track #1	3'	-	RD	NF	6.0	139.7	2.9	135.1	3.1	96.7	95			

Comments:

Approved By: _____

10/12/04 MS 2167 MS 606Type of Observation: ☐ Full Time ☐ On Call ☐ Part Time ☐ OtherClient's Representative Advised ☐

Time Departed _____
 Arrived on Site _____
 Departed Site _____
 Arrived Office _____

Mileage Start _____
 Mileage End _____
 Total Mileage _____

HGM Engineering
 PO Box 31318
 Billings MT 59107
 (406) 698-5388

Material Type				FIELD DENSITY TESTS												Sheet No: <u>5</u>	
EB=Embankment Fill		FB=Foundation Backfill		Type Test		Project: <u>Libby</u>		Project No: _____		Gauge No: <u>13F02</u>		Standards: <u>2167</u> <u>606</u>					
RB=Road Base		RE=Roadway Embankment		N6=6" Nuclear		Operator: <u>T. Erickson</u>											
Test No	Date	Station	Location	CL Offset	Below FG	Mat'l Type	Type Test	Laboratory		Field					Fail (F)	Retest Yes/No	Remarks
								OMC %	Max. Dens.	% Moist	Dry Dens.	Moist Var	% Comp	% Req.			
37	10/12/04	16+00	Track #1 Ref. (Track #3 & 4 Area)	40'	-	RB	NP	6.0	139.7	5.9	135.5	0.1	97	95			
38	10/12/04	14+00	Track #1 Ref. (Track #3 & 4 Area)	60'	-	RB	NP	6.0	139.7	4.4	137.1	7.6	98.1	90			
39	10/12/04	12+00	Track #1 Ref. (Track #3 & 4 Area)	50'	-	RB	NP	6.0	139.7	6.3	139.9	0.3	100	90			
40	10/12/04	10+00	Track #1 Ref. (Track #3 & 4 Area)	30'	-	RB	NP	6.0	139.7	4.8	137.6	7.2	98.5	90			
41	10/12/04	8+00	Track #1 Ref. (Track #3 & 4 Area)	50'	-	RB	NP	6.0	139.7	5.0	137.4	7.0	98.4	90			
42	10/12/04	6+50	Track #1 Ref. (Track #3 & 4 Area)	40'	-	RB	NP	6.0	139.7	4.6	137.0	7.4	99.5	90			
43	10/19/04	20+00	Track #1	2'	-	RB	NP	6.0	139.7	6.1	134.6	0.1	96.3	95			
44	10/19/04	20+50	Track #1	5'	-	RB	NP	6.0	139.7	4.4	136.0	7.6	97.3	95			
45	10/19/04	18+50	Track #1 (Track #3 & 4 Area)	40'	-	RB	NP	6.0	139.7	5.5	138.6	0.5	99.2	90			
46	10/19/04	27+00	Track #1	5'	-	RB	NP	6.0	139.7	5.6	137.7	0.4	98.6	95			

Comments: 10/19/04 DS=2179, MS 599

Approved By: _____

Type of Observation: ☐ Full Time ☐ On Call ☐ Part Time ☐ Other

Client's Representative Advised ☐

Time Departed _____
 Arrived on Site _____
 Departed Site _____
 Arrived Office _____

Mileage Start _____
 Mileage End _____
 Total Mileage _____

HGM Engineering
 PO Box 31318
 Billings MT 59107
 (406) 258-6300

PAGE 02

Material Type		FIELD DENSITY TESTS															
EB=Embankment Fill		Type Test		Project: <u>Libby</u>		Sheet No: <u>6</u>											
TB=Trench Backfill		FB=Foundation Backfill		N6=6" Nuclear		Project No: _____											
RB=Road Base		RE=Roadway Embankment		S6=6" Sandcone		Operator: <u>T. Erickson</u>											
						Gauge No: <u>13P02</u>											
						Standards: <u>P⁵ 21791 MS 599</u>											
Test No	Date	Station	Location	CL Offset	Below FG	Mat'l Type	Type Test	Laboratory OMC %	Max. Dens.	% Moist	Dry Dens.	Moist Var	% Comp	% Req.	Fail (F)	Ratest Yea/No	Remarks
47	10/17/04	27+50	Trench #1	3' RT	-	RB	N _P	6.0	139.7	5.6	134.8	0.4	96.5	95			
48	10/19/04	29+50	Trench #1	5' RT	-	RB	N _P	6.0	139.7	5.8	138.2	0.2	98.9	95			
49	10/19/04	30+00	Trench #1	3' RT	-	RB	N _P	6.0	139.7	5.7	137.9	0.3	98.7	95			
50	10/17/04	30+50	Trench #1	RT	-	RB	N _P	6.0	139.7	4.0	137.5	2.0	98.4	95			
51	10/19/04	31+00	Trench #1	RT	-	RB	N _P	6.0	139.7	4.0	136.3	2.0	98.8	95	F		
52	10/19/04	31+50	Trench #1	3' RT	-	RB	N _P	6.0	139.7	3.7	134.0	2.2	95.9	95			
53	10/20/04	24+00	Trench #1 (Trench #3 + #4 Area)	5' RT	-	RB	N _P	6.0	139.7	6.1	140.6	0.1	100.6	90			
54	10/20/04	32+00	Trench #1	15' RT	-	RB	N _P	6.0	139.7	3.8	138.1	2.2	98.9	95			
55	10/20/04	32+50	Trench #1	15' RT	-	RB	N _P	6.0	139.7	5.2	130.7	0.8	93.5	95	F		
56	10/28/04	18+50	Trench #1	RT	-	RB	N _P	6.0	139.7	4.9	136.8	7.2	97.9	95			

Comments: 10/20/04 DS=2183, MS=612
 10/28/04 DS=2163, MS=605

Approved By: _____

Type of Observation: ☐ Full Time ☐ On Call ☐ Part Time ☐ Other

Client's Representative Advised ☐

HCM Engineering
PO Box 31918
Billings MT 59107
(406) 655-4300

PAGE 04

Material Types

FIELD DENSITY TESTS

EB-Embarkment Fee

Typhoid Toxin

Project:

Sheet No: 7

ITB=Trench Backfill

FB=Foundation Backfill

N4=6th Nuclear

Project No:

Gauge No: 13802

Leads-Road Base

RE= Roadway Embankment

S5=6" Sandcone

Operator:

Standards: 2163 1^{MS} 605

Test No	Date	Station	Location	CL Offset	Below FG	Matl Type	Type Test	Laboratory		Field					Fall (F)	Retest Yes/No	Remarks
								OMC %	Max. Dens.	% Moist	Dry Dens.	Moist Var	% Comp	% Req.			
S7	10/28/04	17+00	Track #1	7'	-	RB	N _p	6.0	137.7	5.2	138.1	0.9	98.9	95			
S8	10/28/04	18+50	Track #1	7'0"	-	RB	N _p	6.0	139.7	4.9	138.5	1.1	99.1	95			
S9	10/28/04	21+00	Track #1	15'	-	RB	N _p	6.0	139.7	4.7	137.6	1.3	98.5	95			
60	10/28/04	22+00	Track #1	7'	-	RB	N _p	6.0	139.7	4.1	136.4	1.9	97.6	95			
61	10/28/04	22+40	Track #1	10'	-	RB	N _p	6.0	139.7	4.3	133.3	1.7	95.4	95			
62	10/28/04	24+80	Track #1	7'0"	-	RB	N _p	6.0	139.7	4.3	132.7	1.7	96.6	95			
63	10/28/04	25+00	Track #1	4'	-	RB	N _p	6.0	139.7	5.9	135.5	0.1	92.0	95			
64	10/28/04	26+00	Track #1	8'	-	RB	N _p	6.0	139.7	5.4	142.2	0.6	101.8	95			
65R	10/28/04	31+00	Track #1	6'	-	RB	N _p	6.0	139.7	3.9	133.3	2.2	95.4	95		Y	
66R	10/28/04	32+50	Track #1	15'	-	RB	N _p	6.0	139.7	4.2	139.4	1.8	99.0	95		Y	

Comments:

Approved By:

Type of Observation: ☐ Full Time ☐ On Call ☐ Part Time ☐ Other

Client's Representative Advised ☐

Time Departed _____
 Arrived on Site _____
 Departed Site _____
 Arrived Office _____

Mileage Start _____
 Mileage End _____
 Total Mileage _____

NOM Engineering
 PO Box 31318
 Billings MT 59107
 (406) 258-6308

Material Type

FIELD DENSITY TESTS

EB=Embankment Fill

Type Test

Project: Libby

Sheet No: 8

TB=Trench Backfill

FB=Foundation Backfill

N6=6" Nuclear

Project No: _____

Gauge No: 13802

RB=Road Base

RE= Roadway Embankment

S6=6" Sandcone

Operator: T. Erickson

Standards: 2720 1602

Test No	Date	Station	Location	CL Offset	Below FG	Mat'l Type	Type Test	Laboratory		Field					Fail (F)	Retest Yes/No	Remarks
								OMC %	Max. Dens.	% Moist	Dry Dens.	Moist Var	% Comp	% Req.			
65	10/29/04	34+00	Trench #1	0' 11"	-	RB	NF	6.0	139.7	3.8	132.6	2.2	91.9	95			
66	10/29/04	35+00	Trench #1	5' 11"	-	RB	NF	6.0	139.7	4.7	136.8	7.3	97.9	95			
67	10/29/04	36+00	Trench #1	5' 11"	-	RB	NF	6.0	139.7	3.8	131.3	2.2	94.0	95	F		
68	10/29/04	37+00	Trench #1	5' 11"	-	RB	NF	6.0	139.7	3.5	132.9	2.5	95.1	95			
69	10/29/04	38+00	Trench #1	5' 11"	-	RB	NF	6.0	139.7	3.8	133.5	2.2	95.6	95			
70	10/29/04	39+00	Trench #1	5' 11"	-	RB	NF	6.0	139.7	3.5	136.4	2.5	97.6	95			
67R	10/29/04	36+00	Trench #1	5' 11"	-	RB	NF	6.0	139.7	4.1	132.7	7.9	95.0	95	F	Y	

Comments:

Approved By: _____

Type of Observation: ☐ Full Time ☐ On Call ☐ Part Time ☐ Other

Client's Representative Advised ☐

Appendix E-2

Submittals

☐ Approved As Submitted

☐ Approved As Noted (see notes/exceptions)

☐ Rejected (re-submittal required)

By _____ Date _____
Engineer

**BURLINGTON NORTHERN SANTA FE RAILWAY - ENGINEERING
CONTRACTOR SAFETY ACTION PLAN**

Please PRINT this page for your records.

[FrontPage Save Results Component]

Thank you for submitting your safety action plan.

This is a copy of your plan that has been submitted.

Use the toolbar and press (file) then (print) to print this Safety Action Plan. If you need any reprints of this Action Plan there will be a \$5.00 charge.

Today's Date 08/31/2004

I. GENERAL INFORMATION

Your Name	Douglas G. Tisdell
Company Name	Envirocon Inc.
Company Address	101 International Way
Company City	Missoula
Company State	MT
Company Zip	59808
Phone Number	406 523-1150

Scope of Work

Remove, decontaminate and load rails and ties. Excavate, transport and dispose of Libby Amphibole and hydrated biotite contaminated soils, import and place backfill materials to specified grade.

Location of Project/Work

Libby Rail Yard, Libby Montana

Anticipated timeframe of project, from 9/1/04 to 11/24/04 (date).

On-Site Supervisor Brian Vibbert Phone 406 546-9551

On-Site Safety Coordinator Douglas G. Tisdell Phone 406 544-6883

BNSF Project Representative Arnie Olson Phone 208-267-6813

II. COMPANY INJURY HISTORY

Frequency Rate = # of reportable injuries x 200,000 divided by the # of actual manhours

Severity Rate = # of lost days x 200,000 divided by the actual manhours

Frequency and Severity Rates for Each of the Last Three Calendar Years:

Year 2001 Frequency 3.08 Severity 3.6

Year 2002 Frequency 2.58 Severity 5.7

Year 2003 Frequency 2.20 Severity 4.1

List some areas of concern (e.g. sprains/strains, back injuries, vehicle operations)

Envirocon is emphasizing internal severity measures to include all incidents not just OSHA incidents. A primary area of concern is equipment damage.

How are you addressing these areas of concern?

Envirocon is addressing these areas of concern through monthly project evaluations, regional operations performance matrix, plan of the day, daily safety meetings, and incentives to regional managers based on improvement.

III. JOB SAFETY BRIEFINGS

The below statements must be checked and implemented within your safety plan; by checking these statements you affirm that they will be accomplished. This Safety Action Plan will not be accepted unless these are checked.

YES Job Safety Briefings will be completed at the start of the work shift and as needed during the course of the day; e.g., personnel changes, weather changes, and/or changes in assignments.

YES Job Safety Briefings will include Emergency Preparedness Information and summarize the findings of Risk Assessment activities.

IV. EMPLOYEE TRAINING

The below statements must be checked and implemented within your safety plan; by checking these statements you affirm that they will be accomplished. This Safety Action Plan will not be accepted unless these are checked.

YES *All employees working on-site at BNSF have completed the BNSF Engineering Contractor Safety Orientation Program.*

YES *All employees working on-site, who will be working within 25' of track centerline, have completed annual Roadway Worker Protection/On-Track Safety Training.*

Check below, other required safety training conducted by/through the contractor company in which your employees, who will be working on BNSF property. Copies of training programs do not need to be provided. BNSF does not conduct safety training for personnel other than BNSF employees. *Safety Training needs to be conducted by/through: the contractor company.*

YES Asbestos

Lead Safety

YES Excavation

YES DOT Training

Fall Protection/Bridge Worker Safety

Confined Space

yes Lockout/Tagout

yes Hazardous Waste

yes Hearing Conservation

yes Respiratory Protection

yes Hazard Communications

yes Personal Protective Equipment

Other

Other

V. EMERGENCY PREPAREDNESS

Written Emergency Preparedness information needs to be at the job-site with work groups. For projects in fixed work locations complete the following. For work groups that will be on the move during the course of a project this information needs to be updated as necessary and maintained with each work group.

The BNSF 24-hour Emergency Phone Number is 1-800-832-5452

The below statements must be checked and implemented within your safety plan; by checking these statements you affirm that they will be accomplished. This Safety Action Plan will not be accepted unless these are checked.

Job Safety Briefings will include emergency preparedness information.

Copies of Material Safety Data Sheets (MSDSs) for hazardous materials will be provided to the BNSF Project Representative and be maintained on-site.

Identify Responding Agencies

	Agency	Telephone	Est. Resp. Time
Medical	St Johns Lutheran Hospital	406 293-0100	5 min.
Fire	Libby Fire Dept.	911	5 min.
Police	Libby Police Dept.	911	3 min.

Verify communications: landline radio YES cellular telephone
Employee assigned to make call and his/her back-up Brian Vibbert
Backup employee to also make the call Douglas G. Tisdell

The below statements must be checked and implemented within you safety plan; by checking these statements you affirm that they will be accomplished. This Safety Action Plan will not be accepted unless these are checked.

YES First Aid and CPR trained employees will be at the job-site(s) and identified during job safety briefings.

YES A First Aid Kit will be available at the job-site.

Latitude/longitude coordinates of job-site (optional)

Written directions to job-site

From Hwy 2 West, take Hwy. 37 North approx 0.6 miles. turn right immediately after crossing rail yard over pass. proceed into work site.

Note: May be necessary to assign an employee to meet emergency response personnel at an intersection
To be determined at site.

VI. FIRE PREVENTION

Hot Work activities will be performed on BNSF property?: Yes NO No

The below statements must be checked and implemented within you safety plan; by checking these statements you affirm that they will be accomplished. This Safety Action Plan will not be accepted unless these are checked.

YES Risk Assessment activities and Job Safety Briefings will identify procedures/strategies, and equipment available for fire prevention and suppression, as well as, locations where suppression equipment will be staged.

YES In Right-of-Way areas, the local fire agency is contacted to check possible hot work bans or restrictions, and to determine ability of local agency to provide emergency assistance.

YES In Right-of-Way areas, the BNSF Engineering Right-of-Way Fire Prevention Risk Assessment form will be completed and maintained on the job-site.

yes All right-of-way fires are to be reported to the responsible BNSF Project Representative.

List fire prevention and suppression equipment on-site.

Water truck, fire extinguishers, water storage tank with pressure sprayer

VII. SAFETY AUDITING

Formal safety audits of on-site work activities will be conducted at the following frequency e.g. twice/week, weekly: weekly

The below statements must be checked and implemented within your safety plan; by checking these statements you affirm that they will be accomplished. This Safety Action Plan will not be accepted unless these are checked.

YES Assessments will include assessment of work behavior, as well as the identification of physical hazards.

YES Reports of audit findings will be available at the job-site for review by BNSF auditors.

Formal Safety Audits will be conducted by (job title); e.g., on-site supervisor, insurance carrier representative, safety committee

Name	Title
Douglas G. Tisdell	Safety Supervisor
Brian Vibbert	Superintendent
Jeff Mikell	Project Manager

IX. ROADWAY WORKER PROTECTION/ON-TRACK SAFETY INFORMATION

In addition to Job Safety Briefings, briefly describe how safety-related information is coordinated within your organization: e.g., safety committee meetings, voicemail systems, mass mailings, job-site postings, etc.

Daily toolbox safety meetings, weekly safety managers meeting, e-mail briefings of safety and health related items, lessons learned from safety websites of incidents and problems encountered by other companies.

For contractors working within 25 feet of track centerline. Must mark what applies to your work group.

Have own roadway worker protection plan/on-track safety program

yes Will use the BNSF on-track safety program (Engineering instruction No. 1.1)

Not Applicable (No workers within 25 feet of track centerline)

A COPY OF YOUR COMPLETED SAFETY ACTION PLAN UPON SUBMISSION, WILL BE FORWARDED TO THE WEBMASTER OF THIS SITE. ADDITIONALLY, PRINT A COPY OF THIS SAFETY ACTION PLAN AND KEEP A MASTER COPY, AND PROVIDE A HARD COPY TO YOUR BNSF REPRESENTATIVE, AND TO EACH OF YOUR ON-SITE WORK GROUPS.

FOR CONTRACTOR WORK GROUPS WORKING WITHIN 25' OF TRACK CENTER-LINE, A COPY OF YOUR ROADWAY WORKER PROTECTION/ON-TRACK SAFETY PROGRAM MUST BE MAINTAINED WITH EACH WORKGROUP. CONTRACTORS WHO ELECT TO ADOPT THE BNSF ON-TRACK SAFETY PROGRAM MUST MAINTAIN A COPY OF BNSF ENGINEERING INSTRUCTION NO. 1.1 WITH EACH WORK GROUP.

Department of
Environmental Quality

Waste & Underground Storage Tank Management Bureau • Asbestos Control Program • P.O. Box 200901 • Helena MT 59620-0901 • (406) 444-5300

APPLICATION FOR A MONTANA ASBESTOS ABATEMENT PROJECT PERMIT
AND NESHA DEMOLITION/RENOVATION NOTIFICATION

DEQ USE ONLY		
Notification Received Date _____		
Notification Postmark Date _____		
ACCT	FUND	ORG
502702	02202	5132

PLEASE FILL IN THE FOLLOWING	
Amount of Initial fee submitted with your Application	LIBBY SUPERFUND N/A
Check Number	_____
<input type="checkbox"/> Final or <input type="checkbox"/> Revision Fee	_____
Check Number	N/A

TO BE FILLED OUT BY APPLICANT	
Type of Notification	<input type="checkbox"/> NESHA Demo/Reno or <input type="checkbox"/> Asbestos Abatement Project Permit <input type="checkbox"/> Original <input type="checkbox"/> Revised # _____ <input type="checkbox"/> Canceled <small>permit number number of revisions</small>
Does Facility have an annual permit?	<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes If Yes ... Permit Number _____

Type of Operation	
<input type="checkbox"/> Renovation <input type="checkbox"/> Demolition	<input type="checkbox"/> Annual <input checked="" type="checkbox"/> Courtesy <input type="checkbox"/> Ordered Demolition <input type="checkbox"/> Emergency Renovation <input type="checkbox"/> Transport <input type="checkbox"/> Disposal

ASBESTOS ABATEMENT CONTRACTOR (Operator)	
ENVIRONCON, INC.	
Contractor, Individual or Company Name	
101 INTERNATIONAL WAY	
Mailing Address	
MISSOULA	MT 59808
City	State Zip
406 523-1150	406 543-7987
Telephone Number	Fax Number
Douglas G. Tiedell	
Contractor Contact Person	
Douglas G. Tiedell	
On-Site Project Contractor/Supervisor	
MTA 2602-CS	1-8-05
Montana Accreditation Number	Expiration Date

SITE LOCATION	
BNSF RAIL YARD	
Building Name / Site	
Between downtown Libby and the Kootenai River	
Location Address	
LIBBY	MT 59923 LINCOLN
City	State Zip County
Site Telephone Number	
Annie Olson	
Owners Representative - Dave Smith	
Location Contact Person	
N/A	N/A 100+
Building Size (sq. ft.)	Number of Floors Age of Site in Years

DEMOLITION/RENOVATION CONTRACTOR (Operator)	
Contractor, Individual or Company Name	
Mailing Address	
City	State Zip County
Telephone Number	Fax Number
Contractor Contact Person	

SITE OWNER	
BNSF Railway Company	
Owner Name	
139 N. Last Chance Gulch	
Mailing Address	
Helena	MT 59601 h+c
City	State Zip County
(208) 267-6813	
Telephone Number	
Annie Olson	
Contact Person for Owner	

Location Present Use

- ☐ Commercial
- ☐ Hospital
- ☐ Industrial
- ☐ Miscellaneous
- ☐ Office
- ☐ Public Building
- ☐ Residence
- ☐ School
- ☐ Ship/Boat
- ☐ University/College
- ☐ Vacant

☒ Rail Yard

Location Prior Use

- ☐ Commercial
- ☐ Hospital
- ☐ Industrial
- ☐ Miscellaneous
- ☐ Office
- ☐ Public Building
- ☐ Residence
- ☐ School
- ☐ Ship/Boat
- ☐ University/College
- ☐ Vacant

☒ Rail Yard

Inspection Information

Is Asbestos Present? ☐ Yes ☐ No

Libby Amphibole
Hydrated Biotite - EMR

(Name of Inspector who performed inspection)

CONTACT EMR - TANYA DRAKE

(Date of Inspection)

763-277-5200

(Accreditation Number)

(Expiration Date)

Project Design Information

KENNEDY / JENKS CONSULTANTS

(Name of Project Designer)

☐ Project Designer

(Accreditation Number)

☐ Contractor/Supervisor

(If project is < 50 sq ft or 50 linear ft)

(Accreditation Number)

Approximate Amount of Asbestos Material, Including -

"Asbestos abatement project" means the encapsulation, enclosure, removal, repair, renovation, placement in new construction, demolition of friable or potentially friable asbestos-containing material in a building or other structure, or the transportation or disposal of friable or potentially friable asbestos-containing material. The term does not include a project that involves less than 3 square feet in surface area or 3 linear feet of regulated asbestos containing material.

Regulated asbestos-containing material (RACM) means (a) Friable asbestos material, (b) Category I nonfriable ACM that has become friable, (c) Category I nonfriable ACM that will be or has been subjected to sanding, grinding, cutting, or abrading, or (d) Category II nonfriable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of demolition or renovation operations regulated by this subpart.

Friable asbestos material means any material containing more than 1 percent asbestos as determined using the method specified in appendix A, subpart F, 40 CFR part 763 section 1, Polarized Light Microscopy, that, when dry, can be crumbled, pulverized, or reduced to powder by hand pressure.

Category I non-friable ACM means asbestos-containing packings, gaskets, resilient floor covering, and asphalt roofing products containing more than 1 percent asbestos as determined using the method specified in appendix E, subpart E, 40 CFR part 763, section 1, Polarized Light Microscopy.

Category II non-friable ACM means any material, excluding Category I nonfriable ACM, containing more than 1 percent asbestos as determined using the methods specified in appendix E, subpart E, 40 CFR part 763, section 1, Polarized Light Microscopy that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure.

Regulated Asbestos Containing Material (RACM)		Non-Friable asbestos material to be removed		Non-Friable asbestos material not to be abated		Indicate unit of measurement below	
	RACM to be abated	CAT I	CAT II	CAT I	CAT II	Linear Feet	Square Feet
Pipes							
Surface Area							
Volume of RACM of Facility Component							

* Approx. 6,000 cu. yd. Hydrated Biotite < 1% Quartz - LA (Libby Amphibole)

Scheduled Dates for Asbestos Abatement

Start Date (mm/dd/yyyy)	Complete Date (mm/dd/yyyy)
09/09/04	11-24-04

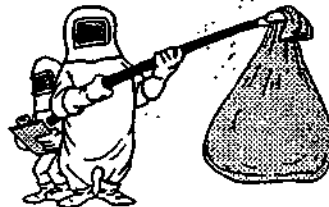
Scheduled Dates for Demolition/Renovation

Start Date (mm/dd/yyyy)	Complete Date (mm/dd/yyyy)

Waste Transporter #1			
ENVIROCON Inc.			
Contractor, Individual or Company Name			
101 International Way			
Mailing Address			
Missoula	MT	59808	Missoula
City	State	Zip	County
406 523-1150			
Telephone Number			
Jeff McKell			
Contact Person			

Waste Transporter #2: (If applicable)			
Contractor, Individual or Company Name			
Mailing Address			
City	State	Zip	County
Telephone Number			
Contact Person			

Waste Disposal Site			
LIBBY LANDFILL			
Site Name			
Mailing Address			
LIBBY	MT	59923	LINCOLN
City	State	Zip	County
Telephone Number			
9/A Permit Number			



FOR EMERGENCY RENOVATIONS	
Date of Emergency	
(Start Date)	(Complete Date)
Description of the sudden, unexpected event	

IF DEMOLITION IS ORDERED BY A GOVERNMENT AGENCY, PLEASE IDENTIFY	
Agency Name	Title
Authority	Date ordered to begin
	Date of Order

Description of procedures to be followed in the event unexpected asbestos is found or previously non-friable asbestos material becomes crumbled, pulverized, or reduced to powder	All work performed using wet method engineering controls, in Level "C" Personal Protective Equipment,
---	---

THIS SECTION APPLIES TO FACILITY DEMOLITIONS/RENOVATIONS	
I certify that the above information is correct and that a State-accredited asbestos inspector inspected the facility.	
Signature	Date

THIS SECTION APPLIES TO ASBESTOS ABATEMENT PROJECTS	
I certify that all work performed pursuant to the authorization of the Asbestos Abatement Project Permit will be performed in accordance with 29 CFR 1926.1101, 40 CFR 763 subpart E, 40 CFR 763.120, 40 CFR 763.121, 40 CFR 763.124, 40 CFR part 61 subpart M, 75-2-501 through 519 MCA, and ARM 17.74.301 through 406. In addition, I hereby certify all asbestos-containing waste materials removed during this project will be transported properly and disposed of in a State-approved Class (I) landfill or similar approved asbestos disposal facility.	
Signature	Date
	8/24/04

HEALTH AND SAFETY DOCUMENT SIGNATURE PAGE

I have read and understand the safety rules described in the Health and Safety Plan.

NAME

SIGNATURE

COMPANY

DATE

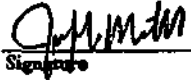
Approvals

Jeff Mikell

Envirocon Project Manager

Name

Title



9-1-04

Signature

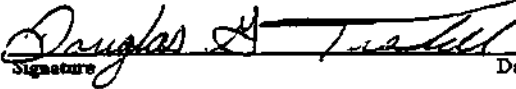
Date

Douglas G. Tisdell

Envirocon Health and Safety Supervisor

Name

Title



09-01-04

Signature

Date

TABLE OF CONTENTS

A.	SITE INTRODUCTION.....	A-1
A.1.	Scope.....	A-1
A.2.	Description of Tasks.....	A-1
B.	BASIS.....	B-1
B.1.	Preparation and Approval.....	B-1
B.2.	Zero Incident Performance (ZIP).....	B-1
B.3.	Policies and Regulatory Basis.....	B-2
B.4.	Changing Conditions and Daily Postings.....	B-2
B.5.	HASP and AHA Familiarization.....	B-3
B.6.	Compliance.....	B-3
C.	SITE ORGANIZATION AND KEY PERSONNEL.....	C-1
C.1.	Project Manager: Jeff Mikell.....	C-1
C.2.	Site Superintendent / Safety Officer: Brian Vibbert.....	C-1
C.3.	Corporate Director Health and Safety: Joseph Ocken, CIH, CSP, CHMM.....	C-1
C.4.	Health and Safety Supervisor / Asbestos Technical Advisor: Doug Tisdell.....	C-2
C.5.	Site Competent Persons.....	C-2
C.6.	Lower Tier Subcontractors.....	C-4
C.7.	Competent Person Designation Form.....	C-5
D.	SITE SECURITY AND CONTROLS.....	D-1
D.2.	Project Rules.....	D-1
D.3.	Communications.....	D-2
D.4.	Site Access.....	D-4
D.5.	Decontamination.....	D-5
D.6.	Reporting Incidents.....	D-9
D.7.	Emissions Controls.....	D-9
D.8.	Qualifications and Access Requirements.....	D-10
E.	HAZARDS.....	E-1
E.1.	Accident Prevention Program.....	E-1
E.2.	Potential Waste Hazards.....	E-2
E.3.	Chemicals Brought on Site.....	E-3
F.	INDUSTRIAL HYGIENE PROGRAM CONTROLS.....	F-1
F.1.	Perimeter Site Monitoring and Sampling.....	F-1
F.2.	Personal Monitoring.....	F-1
F.3.	Personal Protective Equipment.....	F-1
F.4.	Site-Specific Respiratory Protection.....	F-5
F.5.	Heat Stress.....	F-11
F.6.	Cold Stress.....	F-11
F.7.	Hazard Communication Program.....	F-15
G.	SITE SAFETY PROCEDURES.....	G-1
G.1.	Code of Safe Work Practices.....	G-1
G.2.	Employee Participation.....	G-2
G.3.	Safety Procedures for General Labor and Mobilization Tasks.....	G-3
G.4.	Intrusive Work (including excavations and drilling).....	G-8
G.5.	Falling and Tripping Hazards.....	G-11
G.6.	Portable Tools.....	G-13
G.7.	Fire Prevention.....	G-13
G.8.	Lifting Heavy Objects.....	G-16

G.9.	Sanitation and Hygiene.....	G-17
H.	RECORDKEEPING.....	H-1
H.1.	Training and Safety Meeting Records	H-1
H.2.	Injury/Illness	H-1
H.3.	Accident Reports	H-1
H.4.	Employee Exposure Data	H-1
H.5.	Medical Surveillance Records	H-1
H.6.	Written Programs	H-1
H.7.	Health and Safety Plans	H-1
H.8.	Employee Access.....	H-1
H.9.	Health and Safety and Related Logs.....	H-2
I.	INCIDENT AND EMERGENCY PROCEDURES.....	I-1
I.1.	General Emergency Procedures.....	I-1
I.2.	Reporting and Investigating Incidents	I-2
I.3.	Personnel Injury.....	I-3
I.4.	Heavy Weather	I-4
I.5.	Emergency Contacts for Site*	I-6

APPENDICES

Appendix A: Voluntary Emergency Data Form

A. SITE INTRODUCTION

This task-specific Health and Safety Plan (HASP) provides safety-related information and requirements specific to the task and work location(s) described. General requirements contained in the Contractor Requirements for the Libby Rail Yard Asbestiform Fiber Removal and the Envirocon Health and Safety Program Manual along with this task-specific HASP will be implemented except where noted. Significant changes to this HASP shall be documented and approved using a field change request or re-submittal of a revised task-specific HASP.

A.1. Scope

This HASP applies to Burlington Northern and Santa Fe Railroad Company Libby Rail Yard Asbestiform Fiber Removal project located in Libby, Montana.

A.1.a. Site History

The Burlington Northern and Santa Fe Railroad Company Libby Rail Yard facility is located between downtown Libby, Lincoln County, Montana and the Kootenai River to the north. The Libby Railyard was used historically to weigh and switch railroad cars used to ship hydrated biotite, which can contain asbestos including asbestiform fibers of Libby Amphibole. Historical activities have resulted in contamination of near surface soils. The project site is approximately six acres, with a total of six rail lines trending east-west along with associated buildings and siding platforms.

The primary contaminant of concern is Libby Amphibole and hydrated-biotite contaminated soils under the track ballast and surrounding cover soils. The existing ground cover at the facility includes track ballast, gravel, grass and weeds. Historically, several buildings may have existed on the site. Intact concrete foundation walls and concrete slabs are still present at the facility.

A.2. Description of Tasks

The scope of work associated with this project includes (but is not limited to) supervision, labor, equipment and expertise to perform the Remediation of the Burlington Northern and Santa Fe Railroad Company Libby Rail Yard in Libby, Montana. This includes the following job task descriptions:

- Site Mobilization;
- Install a temporary perimeter fence around the Rail Yard Exclusion Zone area;
- Construct equipment decontamination pad;
- Establish water supply system for dust suppression systems and decontamination facilities on site;
- Establish water supply system to provide water for decontamination facilities at the landfill;
- Furnish wastewater treatment system at site for decontamination facilities;
- Remove, decontaminate, and load track rail for transport;

- Remove, decontaminate, and load ties for transport and disposal;
- Remove surface debris;
- Excavate contaminated soils;
- Transportation of waste materials to the Libby landfill;
- Landfill disposal as detailed;
- Import and place backfill material; and
- Facility reclamation.

B. BASIS

This section will discuss the basis in regulations, standards and policies for the project. It includes OSHA regulations and Envirocon policies and procedures.

B.1. Preparation and Approval

This plan is based upon existing available information regarding the site and upon past experience at other sites. This document is also based on OSHA regulations, contractual specifications applicable to the scope of work, the client's health and safety plans and procedures, Envirocon's Health and Safety Program, and Envirocon policies and procedures. This document describes the Task-specific implementation of those policies and procedures. Envirocon personnel and lower tier subcontractors are required to adhere to all of these documents during the course of this project. Some of the applicable regulations and standards are described in Table 0:

B.1.a. Prepared For

This plan was prepared for:

Kennedy / Jenks Consultants
Environmental Management Resources, Inc.

B.1.b. Prepared By

Loren Gunderson, CIH, CSP
Envirocon, Inc.
651 Corporate Circle Suite 114
Golden, Colorado 80401

B.1.c. Approvals and Modifications

This plan and future changes must be approved as follows:

- After preparation and approval by Envirocon, this plan will be submitted to the client's representative in accordance with the applicable contract and specifications.
- Envirocon's designated Project Manager is responsible for the final approval of this plan before transmittal to the client.
- Envirocon's Corporate Director of Health and Safety or designated representative is responsible for approval of this plan and any future modifications after preparation. Note: Certified Envirocon Safety and Health Professionals (CIH or CSP) are hereby designated to approve changes to this plan for the Director.

B.2. Zero Incident Performance (ZIP)

Zero Incident Performance means error-free project execution: no injuries, illnesses, property damage, community or environmental impacts, or incidents that could have resulted in these occurrences under different conditions. Zero Incident Performance does not happen by chance: It is achievable through the integration of safety into all management systems, the project process, and individual efforts. We believe that all incidents are preventable. This objective serves as the primary basis for this HASP.

B.3. Policies and Regulatory Basis

Table 0 Some Important Applicable Regulations and Standards	
Latest revision	Contract Specifications applicable to the scope of work.
BNSF	Safety Rules and General Responsibilities
29 CFR 1910.20	Access to employee exposure and medical records
29 CFR 1910.38	Employee emergency plans
29 CFR 1910.95	Occupational noise exposure
29 CFR 1910.134	Respiratory protection
29 CFR 1910.120	Hazardous waste operations
29 CFR 1910.151	Medical services and first aid kit
29 CFR 1910.157	Portable fire extinguisher
29 CFR 1910.1000	Air contaminants
29 CFR 1910.1001	Asbestos
29 CFR 1910.1200	Hazard communication
29 CFR 1926	Construction Industry Standards

B.4. Changing Conditions and Daily Postings

B.4.a. Identification of Changes

The plan presents a realistic approach to the anticipated hazards at the site. It is expected that site conditions may vary throughout the duration of the project. This plan will be modified as necessary to respond to changing conditions and/or scope of work. Changes in conditions and identification of previously unrecognized hazards are identified by the following processes:

- site inspections by supervisory and site safety personnel
- observations and suggestions by all personnel
- proper planning for each new phase of operations
- Activity Hazard Analysis (AHA) for each new phase of operations
- communicating plans and controls to all effected employees
- accident investigations and lessons learned from this and other projects
- contract modification

B.4.b. Response to Changes

Adjustments to procedures may be required. The Health and Safety Supervisor will be responsible for developing the response to these changes.

- New procedures and/or tasks will be addressed by a new or modified AHA.
- Changes in PPE and/or monitoring requirements will be modified by briefing the crew.
- Significant changes to this HASP shall be documented.
- Changes in PPE and AHAs will be discussed in the morning safety meeting, by special safety meetings held as necessary throughout the day, and by postings.

B.5. HASP and AHA Familiarization

The information presented in this plan will be reviewed with the employees during task-specific training to be completed before working on site. These site entry briefings will focus on the specific tasks of those being briefed. A copy of this plan will be available at all times on the site for any one to review thoroughly. As the project initiates new tasks on site, the crews for those tasks will be briefed on the appropriate AHA(s). AHAs will highlight applicable controls from this plan. All assigned personnel, visitors, and regulatory personnel will document their familiarity with the AHA by signing a training acknowledgment. Copies of training acknowledgments for Envirocon employees, vendors, and subcontractors will be individually maintained in Envirocon's Health and Safety files. AHA trained individuals are therefore expected to be familiar with and comply with all aspects of this plan. If the safety requirements are unclear each individual is responsible for getting clarification from their supervisor. The qualifications required for various tasks on this project are summarized in the training and qualifications section below.

B.6. Compliance

Failure to follow the rules and procedures prescribed in this document potentially jeopardizes the working environment of other employees. For this reason, Envirocon is prepared to enforce the progressive disciplinary procedures described in the site control section of this document for those who fail to follow the established policies and procedures for this project.

C. SITE ORGANIZATION AND KEY PERSONNEL

29 CFR 1910.120 requires an effective site organization to be responsible for supervision of all work at hazardous waste sites. The purpose of this section is to describe this site's organization as it applies to this project.

C.1. Project Manager: Jeff Mikell

The Project Manager is responsible for oversight and management of all aspects of the project including health and safety, quality assurance, construction, remedial design, equipment, and personnel.

The Project Manager is responsible for project health and safety performance in accordance with ZIP goals.

- Conducting periodic site inspections.
- Participating in incident investigations.
- Provides safety leadership through example and by holding all personnel assigned to this project accountable for their safety responsibilities.

C.2. Site Superintendent / Safety Officer: Brian Vibbert

The site supervisor is responsible for coordinating activities with the project manager and site safety officer. This includes:

- enforcing the provisions of this HASP;
- preparing for new tasks in advance of field operations in accordance with the Envirocon Field Operations Manual;
- ensuring that an AHA has been completed before any new work commences; and
- briefing crew members before assigning them to the new task;
- ensuring that employee safety suggestions are fairly and respectfully evaluated, and that employees are informed of the outcome of the evaluations;
- monitoring the conduct of operations in the field to ensure safe delivery of a quality product for the client;
- supervising subcontractors in accordance with this plan;
- site emergency coordinator and
- ensuring that injured personnel (with or without life threatening injuries) are escorted to medical treatment by the safety officer or other supervisory personnel.

C.3. Corporate Director Health and Safety: Joseph Ocken, CIH, CSP, CHMM

Envirocon's Corporate Director of Health and Safety is responsible for the development and implementation of the Corporate Health and Safety Program. The program contains Envirocon's accident prevention plans and procedures and other related plans, policies and procedures required by OSHA standards. The Corporate Director is responsible for:

- ensuring that all health and safety issues on site are resolved;
- ensuring that employee complaints are addressed in accordance with Envirocon policies and procedures; and applicable laws;
- ensuring that all confidential employee complaints received by the director are kept confidential;
- ensuring appropriate investigation of all incident reports;
- ensuring that audit findings are corrected in accordance with Envirocon policies and procedures; and applicable laws; and
- providing professional support for the project manager's health and safety program.

C.4. Health and Safety Supervisor / Asbestos Technical Advisor: Doug Tisdell

The Project Health and Safety Officer (HSS) / Asbestos Program Manager assigned to the project is responsible for the following:

- developing and implementing the Project Manager's task-specific health and safety program and procedures;
- providing professional technical support for the Project Manager with regard to all matters of health and safety associated with the project;
- developing and reviewing project health and safety procedures, hazard analysis and other supporting documents;
- implementing and administers this HASP;
- performs site inspections to include frequent visits to the work site and haul route;
- maintaining site safety records including safety meetings, training, air monitoring, and accident/incident investigation.
- conducts periodic audits of the project site for the Corporate Director;
- coordinating all health and safety activities with the Project Manager;
- alternate site emergency coordinator, and
- in the event that personnel fail to adhere to established safety guidelines, recommending disciplinary and/or corrective actions to the Project Manager.

C.5. Site Competent Persons

OSHA's general safety and health provisions from the construction industry standards (29 CFR 1926.20(b)) include accident prevention responsibilities. Such programs shall provide for frequent and regular inspections of the job sites, materials, and equipment to be made by competent persons designated by the employers. OSHA's regulations regarding scaffolding, excavation and hazardous waste operations have similar requirements. The construction safety competent person is defined in 29 CFR 1926.32 to mean "one who is capable of identifying existing and predictable hazards in the surroundings

or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.”

Competent persons are designated on the form that follows this section. Each competent person is given responsibility and authority for certain aspects of safety on site. It is important for each competent person to recognize the limits of their own knowledge, training, experience and capability. It is the responsibility of each competent person to act within the limits of their own knowledge, training, experience and capabilities.

C.5.a. Site Safety Competent Persons

The HSS(s) serve as the general site competent person (SCP) responsible for accident prevention in accordance with 29 CFR 1926.20. The competent person is responsible for, and authorized to act to ensure that personnel are not working under conditions, which are unsanitary, hazardous, or dangerous to their health or safety.

The competent person’s accident prevention responsibilities includes

- frequent and regular inspections of the job site,
- inspections of materials on site, and
- inspection of equipment on site.

The project manager may designate additional competent persons.

Designated and authorized persons, in accordance with 29 CFR 1926.32, must be capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees.

Once designated and authorized, these competent persons share Envirocon’s authority to take prompt corrective measures to eliminate these hazards.

C.5.b. Excavation Competent Person (as designated in the table below)

This individual will have direct supervisory control over all excavation activities involving entry into excavations or trenches. All competent and authorized persons shall acknowledge their responsibility by signing the *Competent Person Designation Form* below.

Compliance standards

The excavation competent person ensures compliance with 29 CFR 1926, Subpart P (1926.650 through 652). The scope of these regulations include all excavations (e.g., hand digging, equipment excavation, with or without personnel entry). Additional competent persons may be designated by the Project Manager in consultation with the Corporate Director of Health and Safety. Designation will be based on experience and knowledge of these standards.

Specific duties include:

- Assists supervisor with planning excavations obtaining such information as to completely and correctly execute the activity. Ensures that utilities are located and marked (underground or overhead hazards) prior to excavating. Hand dig to locate when excavating within six feet of utilities.

- Where personnel entries are involved, classifies soils in accordance with OSHA soil classification in 29 CFR 1926 Subpart P.
- Ensures the use of protective systems in accordance with Subpart P where personnel entries are required.
- Monitors all excavation activities for associated hazards.
- The competent person is authorized by Envirocon to take corrective action to eliminate hazardous or dangerous situations. This includes halting excavation operations and/or removing personnel from excavations.
- Performs inspections of excavations prior to the start of work, and as needed throughout the shift and after every rainstorm.

C.6. Lower Tier Subcontractors

Lower Tier Subcontractors are responsible for supervising their work and personnel in accordance with this plan and applicable site policies and procedures. Regardless of other requirements, lower tier subcontractors shall adhere to all BNSF, federal, state and local laws and regulations. In particular this includes the requirements of 29 CFR 1910.120/1926.65 HAZWOPER Standards. Lower tier subcontractors personnel will be supervised in accordance with the same requirements and standards as Envirocon and subcontractor personnel. Where their programs, policies and procedures exceed the requirements of this document and the applicable site policies and procedures, the lower tier subcontractor may use their own policies and procedures to implement these requirements, otherwise they must adopt this document. When a lower tier subcontractor intends to implement a policy more stringent than an AHA in place, such field changes shall be made in the AHA to document implementation of the policy.

C.6.a. Site Access Control

Envirocon is in part responsible for controlling access to this site along with our client. Envirocon reserves the right to deny access to Envirocon personnel. All other personnel who are not otherwise qualified or appropriately (PPE) protected to work on site may be denied access.

This safety plan does not necessarily address all of the hazards specific to lower tier subcontractors' work. Lower tier subcontractors shall submit either a task-specific health and safety plan for their particular operation(s) or prepare and submit appropriate Activity Hazard Analysis(es) to append to this plan.

C.7. Competent Person Designation Form

COMPETENT PERSON DESIGNATION		
<p>The following individual(s) has been designated as a "Competent Person," meaning one who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who is hereby authorized by Envirocon to take prompt corrective measures to eliminate them.</p> <p>The person(s) named below has knowledge of the systems, equipment, conditions and procedures in relationship to the proper use, inspection, manufacturers' recommendations and instructions, and maintenance as designated below. This person(s) has been delegated the responsibility to coordinate all activities and operations as defined by the designation(s). In carrying out these responsibilities, it shall be the duty of the competent person to act within the limits of their knowledge and training.</p>		
NAME/DESIGNATION(S)	COMPANY	COMPETENT PERSON
Rick Rogers	Envirocon	<input checked="" type="checkbox"/> Excavation
<p>Acknowledgment:</p> <p>Signature _____ Date _____</p> <p>Competent Person</p>		
Brian Vibbert	Envirocon	<input checked="" type="checkbox"/> Excavation <input checked="" type="checkbox"/> Site Safety
<p>Acknowledgment:</p> <p>Signature _____ Date _____</p> <p>Competent Person</p>		
Doug Tisdell	Envirocon	<input checked="" type="checkbox"/> Site Safety <input checked="" type="checkbox"/> Excavation,
<p>Acknowledgment:</p> <p>Signature _____ Date _____</p> <p>Competent Person</p>		

D. SITE SECURITY AND CONTROLS

This section deals with site access and general project rules, and the controls related to waste management and access to contaminated areas to ensure qualifications of personnel.

D.1.a. Public Safety

The work area shall be suitably delineated (i.e., as appropriate for a construction site) in order to prevent unauthorized entry. Envirocon visitors shall be directed to the project manager's designated representative to seek authorization when appropriate. Visitors shall be signed in at the administrative office of Envirocon or other location as directed. Visitors that are not qualified for work in the EZ shall be escorted or otherwise prevented from accidentally entering the EZ.

All unattended equipment will be secured physically and mechanically during periods of non-use.

D.2. Project Rules

The project rules have been developed by BNSF and Envirocon in order to create a problem-free and rewarding work environment, one in which the employee understands what is expected of them on the project site. An employee who fails to maintain at all times the proper standards of conduct or who violates any of the following rules and regulations may be subject to disciplinary action, including but not limited to, termination of employment or denial of access.

D.2.a. Unacceptable Conduct

Unacceptable employee conduct and/or violation of a project rule or requirement may be reason for disciplinary action up to and including suspension without pay, termination of employment, or denial of access to the work area or client facilities. Examples of unacceptable employee conduct and/or rule violation are as follows:

- Possessing, when not authorized project, or other person's property or services, or theft of the same.
- Altering, damaging, or mutilating project, or other person's property.
- Violating the Security Rules.
- Making or stating false claims or falsifying reports or records.
- Refusing to submit to a search.
- Refusing to submit to drug and alcohol screening or testing or other similar inspections.
- Possessing or using alcoholic beverages, controlled substances, or weapons on any project.
- Using or possessing keys or other devices used for lock opening without specific permission.
- Failure or refusal to perform assigned work as directed.
- Fighting.

- Negligence resulting in an infraction of health and safety or project rules or requirements.
- Taking unauthorized work breaks.
- Engaging in horseplay of any kind.
- Not using trash receptacles or otherwise creating unsanitary conditions.
- Smoking, using tobacco, or eating in prohibited areas.
- Violating health and safety or project rules or requirements.
- Sexual harassment.
- Not reporting use of prescription drugs.
- Not reporting equipment or material damage.
- Not reporting an accident or incident.
- Displaying pornographic, sexually explicit or otherwise offensive photographs, calendars, or other materials that may be objectionable to other individuals or groups.

D.2.b. Discipline

Envirocon reserve the right to take disciplinary action at its discretion up to and including suspension or termination of employment or denial of access to the site work areas, depending on the severity of the violation.

D.2.c. Subcontractors

Subcontractors shall also adhere to established policies and procedures applicable to this project site.

Subcontractors are responsible for disciplinary actions regarding their own employees and their lower tier subcontractors.

Failure of subcontractor employees to adhere to policies and procedures as described in this document will result in verbal or written warnings to the responsible subcontractor.

Envirocon reserves the right to permanently or temporarily remove and bar subcontractor employees from the project site. Unacceptable conduct or failure to adhere to established policies and procedures willfully or repeatedly may result in such removal from the project site.

D.3. Communications

Site communications for this project will follow the following communications protocols: Each employee while in exclusion areas:

Primary means is by visual communication with a buddy.

Alternate communication is by radio.

Envirocon shall furnish and post asbestos warning signs conforming to the requirements of 40 CFR 61.154 and 29 CFR 1910.145(d)(4) on perimeter fence. Warning signs shall be posted at the entrances and at intervals not to exceed 100 meters (328 feet) at the site exclusion zone fence and disposal facility fence. Post an approximately 20 inch by 14 inch manufactured caution sign at each entrance to the work area displaying the following legend with letter sizes and styles of a visibility required by 29 CFR 1926:

LEGEND

DANGER

ASBESTOS

CANCER AND LUNG DISEASE HAZARD

RESPIRATORS AND PROTECTIVE CLOTHING ARE REQUIRED
IN THIS AREA

Provide spacing between respective lines at least equal to the height of the respective upper line.

Post an approximately 10 inch by 14 inch manufactured sign at each entrance to each work area displaying the following legend with letter sizes and styles of a visibility at least equal to the following:

LEGEND

NOTATION

No Food, Beverages or Tobacco Permitted 3/4" Block

All Persons Shall Don Protective Clothing (Coverings) Before~
Entering the Work Area 3/4" Block

All Persons Shall Shower Immediately After Leaving Work Area and Before
Entering the Changing Area 3/4" Block.

Standard Hand Directing Signals (Placing Materials)

Stop: Left or right hand in a fist pointing upwards.

Emergency Stop: Both hands in a fist pointing upwards.

Set brake, reduce engine to idle speed and remove hands from wheel: Both hands open and fingers spread, palms forward pointing up. (This should appear to be a motion like a driver lifting hands off of the wheel.)

Hold your position and open dump gate: Both hands in a fist with thumbs up.

Move cautiously straight forward or backward: Either hand pointing upward, palms facing in the motion of travel, swinging forward and backward. (This signal should produce a gesture of hands waving someone forward or pushing back. Use the fingers only to indicate an even slower or smaller amount.)

You are clear to raise your bed: Hold one hand in a fist to indicate stop (i.e., hold your position) and use the other hand to point index finger into the air.

You are clear to lower your bed: Hold one hand in a fist to indicate stop (i.e., hold your position) and use the other hand to point index finger downward.

Emergency Hand Signals:

Hands waving above head: Attention getter.

Hands motioning from front to back overhead: "Follow me immediately... evacuating the area."

Grip on a partner's wrist or placement of both hands around a partner's waist: "Leave the area immediately, no debate."

Hands on top of head: "Need assistance."

Thumbs up: "Okay, I'm all right, I understand."

Thumbs down: "No, negative."

Audible Emergency Signals

Site evacuation notification:

- The signal is a continuous horn blast from air horns or truck horns.
- Unless otherwise directed, all personnel will leave the Exclusion Zone and head for the predesignated assembly point (see emergency procedures).

D.4. Site Access

Access to the site shall be limited to those personnel that are qualified and have an acceptable (in the judgement of the client facility's designated representatives and the Envirocon security manager) reason for being on site. Continuing access is further conditioned on adherence to the established site policies and procedures.

D.4.a. Contamination Control Boundaries

The site safety officer is responsible for establishing and maintaining contamination control boundaries and supervising decontamination. Envirocon shall erect temporary fencing to establish an exclusion zone, contamination reduction zone, and support zone.

Work Areas. The work area, for purposes of this project, is that area defined by hazardous waste and supporting operations. The work area is that area that is regulated by 29 CFR 1910.120 and/or 1926.65.

Exclusion Zone (EZ). The EZ is that part of the work area where, at a given time, workers may potentially come in contact with contaminated materials. This contact is generally defined as inhalation of airborne levels exceeding task-specific action limits or 50% of established exposure limits (OSHA or ACGIH). Contact also includes any ingestion, skin contact, injection, or other contact route of exposure to materials exceeding EPA or other established levels of contamination for the site. All disturbances of contaminated media will occur within the exclusion zone.

Contamination Reduction Zone (CRZ). The CRZ is that part of the work area between the EZ and support areas where contamination from the EZ is controlled in such a way as to remove the potential for contaminating support areas. . Waste loading will be permitted in the contamination reduction zone.

Support Area. The support area is that part of the work area where supporting tasks are conducted, and where the potential for exposure to contaminants has been fully controlled (i.e., personnel are not exposed to potential contact with contaminants).

Boundaries

Boundaries are established by the site safety and health officer based on the definitions above as compared to actual site conditions as monitored. Boundaries are flexible and should reflect current site conditions.

Boundaries to be marked with suitable barriers (e.g., yellow banner guard, brightly colored rope, barricades, or orange snow fence) to clearly establish the specified areas and the applicable regulations for that area. If rope is used, pennants should be tied to the rope to help increase the visibility to foot and vehicle traffic and to provide a suitable warning.

D.5. Decontamination

The site safety officer is responsible for establishing and supervising decontamination on site. The following procedures are intended to establish guidelines for this purpose. As work progresses control zones may be altered. It is essential that the safety officer adjust this process as necessary to ensure that:

- personnel and equipment leave the site free of contamination, and
- contamination is not spread to other areas on site.

D.5.a. Contamination Reduction Zone(s) (CRZ)

Contamination Reduction Zone(s) are those areas established for the purpose of transition between an EZ and adjoining areas. CRZs should be established for personnel and/or equipment to decontaminate during exit from an EZ into:

- clean support areas, and/or
- an adjoining EZ with different or lesser contamination.
- Envirocon shall furnish separate personnel and equipment decontamination facilities within the contamination reduction zone. Decontamination facilities system shall be placed and operating prior to initiation of clearing and waste excavation.

D.5.b. Frequency

All equipment will be inspected and be adequately decontaminated to avoid cross-contamination when moving out of an EZ.

All equipment will be decontaminated for site release before leaving the site.

All personnel will be decontaminated before leaving a designated EZ.

D.5.c. Personnel Decontamination Procedures

Entering Contaminated Area through Support Zone:

- Pick up clean PPE and boots.
- All donning of clothing and equipment, taping, etc. is done here.
- Equipment contaminated from the preceding day is to be picked up in the contamination control area.

CRZ:

- Prior to entering this area, be sure that all personnel protective equipment is in good working condition.
- Conduct final inspection of PPE ensemble.

Exiting Exclusion Zone

- Personnel and equipment leaving the Exclusion Zone shall be thoroughly decontaminated.
- The following protocols shall be used for the decontamination stations according to the level of protection as follows. Where a step involves an article that is not prescribed, skip the step.

Disposable PPE (or other lightly contaminated solid materials) will be placed in a sealable container affixed with a legible description of contents (and origin, date, responsible party, and phone number) for disposal in an appropriate landfill. Such a container will be a minimum of two layers of 6 mil. poly of substantial enough construction to sustain repeated lifting/carrying by hand or light mechanical conveyance without damage to seams, sealing mechanism or rupture due to contents.

TABLE 2	
1	equipment drop
2	outer boot rinse
3	outer boot removal
4	outer glove removal
5	remove hard-hat
6	coverall removal
7	remove inner gloves
8	shower
9	remove respirator (in shower)
10	rinse respirator
11	hand dry and bag respirator
12	change to street clothing

D.5.d. Emergency Decon – Evacuation to CRZ or Immobilized Victims

This procedure applies to non-exit decontamination. Examples of the circumstances for these emergencies include the following. Emergency decon procedures are intended to be a guideline. Depending on the nature of the actual emergency, response personnel and evacuees will ultimately be responsible for weighing the risks of the emergency against the risk of incomplete decontamination.

EZ Evacuation to the CRZ.

In this case employees are evacuating the EZ due to a release or emergency limited to the EZ that requires all or most of the employees to retreat to the CRZ.

The main objective in this case is to perform the minimum decon necessary to prevent gross contamination of the CRZ while sheltering employees.

Immobile Victims are Prepared for Medical Evacuation Inside the EZ.

In these cases, immobile victims will be decontaminated (to the degree this can be safely accomplished) in preparation for rescue personnel to remove them on a litter or backboard.

- Gently wash and rinse outer garments to the extent this can be safely accomplished.
- Lay down clean tarps, trash bags or other soil barriers for EMTs and their equipment.
- If possible, place the victims on clean barriers or lay barriers as close as possible to the victims.
- Bring similar clean materials to the CRZ for placing in the ambulance or evacuation vehicle.

- Bring clean potable water and a first aid kit to the victim for cleaning wounds.

D.5.e. Emergency Decon – Evacuation to Support Areas or Mobile Victims

This procedure applies to circumstances requiring exit decontamination. Emergency decon procedures are intended to be a guideline. Depending on the nature of the actual emergency, response personnel and evacuees will ultimately be responsible for weighing the risks of the emergency against the risk of incomplete decontamination. . Examples of the circumstances for these emergencies include the following.

EZ Evacuation to Support Zone areas.

In this case employees are evacuating the EZ beyond the CRZ.

The main objective in this case is to shed contaminated materials quickly (with the idea that discarded articles can be decontaminated later when the emergency is over).

Mobile victims will be expeditiously evacuated from the area for medical treatment in support areas.

In these cases, immobile victims will be decontaminated (to the degree this can be safely and expeditiously accomplished).

EMTs and medical facilities must be advised that the employee may still have some contamination.

D.5.f. Equipment Decontamination

Equipment decontamination for release from the site will be performed on the facility de-con pad.

Prior to exiting an EZ, the equipment operator will ensure that the equipment is inspected for visible gross contamination. Visible gross contamination will be removed using shovels and hand equipment as necessary to prevent cross-contamination of the site. Pressurized water will be used to perform the detail decontamination.

Before release from the site, all contaminated equipment will be thoroughly decontaminated at the equipment de-con area using wet methods and HEPA vacuum to remove visible contamination.

- If material is judged as un-cleanable it will not be used outside the Contamination Zone and will be disposed of at the end of its usefulness.

D.5.g. Small Equipment Procedure

Surface debris and dirt will be removed from small equipment and tools with vigorous wet brushing and wiping.

D.5.h. Disposition of Decontamination Wastes

All equipment and solvents used for decontamination shall be decontaminated or disposed of with the established waste streams as described in the waste management plan.

D.6. Reporting Incidents

All incidents must be reported in accordance with the project Health and Safety Plan (HASP) and Envirocon procedures.

The on-site supervisor is responsible for ensuring that the Hazardous Waste Manager is informed of any spills.

This includes, but is not limited to, the following:

- accidents (with or without damages),
- finding unusual materials or soil conditions (e.g., previously disturbed soils, materials with unusual odors, materials with unusual coloration, etc.);
- spills of remediation waste; or
- spills of lubricants, coolants, fuels, or any other hazardous materials.

D.7. Emissions Controls

Dust and Airborne Fiber Controls

Dust and airborne fiber levels will be monitored on site in accordance with the HASP monitoring requirements for protection of personnel. Recognized limits for this monitoring include the Department of Labor (OSHA) Permissible Exposure Limits (PEL) and/or the American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Values (TLV).

Perimeter fiber levels will be monitored by EMR to ensure contaminants do not leave the EZ.

Exceedance shall be controlled by a combination of the following:

- changing control zone boundaries
- upgrading respiratory protection control
- slowing or suspending intrusive work
- application of water

D.7.a. Spill Response and Prevention

Spill prevention controls and response procedures are documented in the emergency response procedures of this Health and Safety Plan.

D.7.b. Waste Minimization

Waste generated on site will be minimized by proper sampling and categorization of waste streams.

Waste generated on site will be minimized by protecting segregated wastes from wind, weather and runoff.

D.8. Qualifications and Access Requirements

Access to project sites is conditioned upon maintaining qualifications with regard to training, medical monitoring, drug & alcohol testing, adherence to required procedures, and related requirements. Failure to maintain these qualifications may result in removal from site and/or termination of employment.

All onsite workers involved in or working onsite during intrusive activities that will disturb soils or waste must have completed the OSHA 40-hour HAZWOPER training and annual updates and must have a minimum of 32 hours of asbestos training and 16 hours of site-specific training.

D.8.a. Training Qualifications Summary

Table D.8.a summarizes the training qualifications for this project.

	40 Hour Training	8 hr annual refresher	8 Hr Supervisor	BNSF Safety Training	Project HASP and Site Training	Applicable AHAS	Daily Safety Briefings	Respiratory Protection Training	AHERA 40/32 hour Training	Asbestos Awareness
Supervisors	X	X	X	X	X	A	X	X	X	
Level C (i.e., with potential use of respirators)	X	X		X	X	A	X	X	X	
Work outside of EZ (e.g., office staff)				X	X	A	X			
Managers entering EZ to observe only	X	X		X	X	X	X	X		X
Truck Drivers	X	X		X	X	A			X	
Delivery personnel outside of EZ					E					

A = Information as applicable to hazards and tasks on site.

O = Site HSO will determine whether a 32-hour HAZWOPER course will suffice

- All personnel performing work on this project will receive a briefing on this HASP. This training shall include the following:
 - Names of personnel and alternates responsible for safety and health.
 - Safety, health and other hazards present on site and off site.
 - Use of personal protective equipment.
 - Site Safety Practices/Standard Operating Procedures
 - Work practices by which the employee can minimize risks from hazards.
 - Safe use of engineering controls and equipment on the site.

- Medical surveillance techniques, and recognition of symptoms and signs that might indicate overexposure to hazards.
 - An emergency action plan meeting the requirements for safe and effective responses to emergencies, including all necessary equipment.
 - spill containment program.
 - Decontamination procedures.
 - Proper use of field equipment.
 - Employees rights and responsibilities.
- Employees shall be briefed on applicable AHAs.
 - This training must be acknowledged on the sign-up sheets at the front of this plan.
 - Worker Acknowledgement of asbestos training will be signed by employees on form in Appendix G.
 - Personnel entering the exclusion zone shall have a minimum of 40 hours of HAZWOPER training in accordance with 29 CFR 1910.120 or 1926.65. This includes an additional three days of On-the-Job Training (OJT) which must be documented.
 - Personnel required to wear respiratory protection will have a minimum of 40 hours of HAZWOPER training and appropriate asbestos training, to include respiratory protection training.
 - Supervisors will have an additional 8 hours of supervisory training for work in the EZ.
 - Personnel required to have HAZWOPER training must be up to date on annual 8 hour refresher training.
 - Personnel performing support functions (i.e., work outside of the EZ or CRZ) are not required to have HAZWOPER training but shall be briefed on this HASP and have completed BNSF Safety Training.
 - Personnel will be provided specialized training to qualify them as a "competent person", as for example for excavations, confined space entry, and other useages under the OSHA standards.

D.8.b. Meetings

In order to maintain qualifications, it is necessary to have regular meetings in order to enhance planning efforts and to pass information from lessons learned or changes in procedures.

Daily Safety Meetings

A daily "tailgate" safety meeting will be held before starting work. Safety meetings will also be held when site conditions change, before starting new activities, and after incidents.

These daily meeting shall be used to keep personnel up to date on changes in plans and procedures since their initial training and also to ensure coordinated work assignments by outlining the day's activities and job assignments.

Daily "tailgate" safety meeting attendance is mandatory for all site personnel including lower tier subcontractors; personnel not in attendance must review topics discussed prior to entry.

Meetings will also be used to discuss:

- Topics of interest or concern of the crew.
- Suspected hazards for that day's work and what precautions are necessary to deal with these hazards.
- Necessary training requirements and site work rules.
- Changes in work practices or environmental conditions.
- Precautions or safe work practices related to the day's site activities.
- New or modified site-wide procedures or requirements.

Documentation of daily safety meetings shall be maintained and made available for inspection..

Daily safety meetings shall be used as a time for personnel to make safety suggestions. Suggestions shall be noted in the minutes and evaluated by supervisory and safety personnel. Actions taken on suggestions should be noted on the daily safety meeting form.

D.8.c. Medical Qualifications Summary

The following medical qualifications are required to perform work in certain areas.

TEST COMPONENT (1)	Level D (1)	Level C Exclusion Zone (1)	Asbestos worker	Support Zone Workers (1)	Envirocon New Hires (1)(5)	Post-Accident/ exposure (1)	End of Project (1)(2)
Occupational History/update	X	X	X	(5)	X		(6)
Audiometric Exam	X	X	X		X		
Manual lifting protocol	X	X	X		X		
Drug testing(1)					(5)	(4)X	
Fitness to return to work (after work/non-work related injuries or illness).						X	
Fitness for Hazardous Waste Work (29 CFR 1910.120) including liver functions		X				(1)	(6)
Fitness to wear respirators (29 CFR 1910.134)		(3)	X		(3)		
Asbestos protocol (7)		X	X				

TEST COMPONENT (1)	Level D (1)	Level C Exclusion Zone (1)	Asbestos worker	Support Zone Workers (1)	Envirocon New Hires (1)(5)	Post-Accident/ exposure (1)	End of Project (1)(2)
Basic Fitness For Duty (Level D, Construction, or non-HAZWOPER)	X	X		(5)	(5)		X

NOTES:

(1) WorkCare provides medical monitoring for all Envirocon employees through local health care facilities. The appropriate protocol will be scheduled by an authorized Envirocon representative and should never be scheduled by the employee (except in the case of a medical emergency). Lower tier subcontractors and guest are required to produce their own protocols equivalent to those indicated and/or in accordance with the referenced regulatory requirements. Employee may be required at any scheduled exam, examinations conducted after accidents, randomly, or as part of facility procedures to donate specimens for drug and alcohol testing. Failure to conform to medical monitoring requirements, drug & alcohol, or other related requirements may be grounds for removal from site and termination of employment.

(2) This column refers to certain task-specific protocols. It IS NOT A TERMINATION OF EMPLOYMENT EXAM requirement. All Envirocon employees should be notified of potential eligibility for termination exams when they are terminated from employment. If they request such an exam, the Director of Health and Safety will review the request and determine eligibility under the Envirocon Medical Monitoring Program in accordance with 29 CFR 1910.120.

(3) Must be completed prior to wearing respiratory protection

(4) As determined by Envirocon policy and the Director of Health and Safety accidents, incidents, injuries, or illnesses involving medical evaluations, potential OSHA recordability, potential property damages in excess of \$500, involving damages or injuries to parties not affiliated with Envirocon shall be evaluated.

(5) New employees are hired provisionally based on their ability to pass the fitness for duty examination. Workcare makes the final determination regarding fitness for duty for Envirocon Employees (this includes all aspects of fitness for duty and drug testing results). New hires may begin Level-D work (i.e., this evaluation does not authorize work where exposures may exceed the action levels for chemical exposures) with the basic fitness for duty evaluation provided by the attending or examining physician. The examining or attending physician's evaluation is considered temporary (not to exceed 30 days) until final evaluation by Workcare's final evaluation.

(6) Employees that will be terminated at the end of the project and have not had a HAZWOPER physical within the last six months shall be offered a termination examination.

(7) Workers who for a combined total of 30 or more days per year are engaged in Asbestos Class II work per 29 CFR 1910.1101

E. HAZARDS

This safety and health program includes orderly processes for recognizing and evaluating hazards. Hazard identification and evaluation must be a continuing process although the focal point is the planning phases of tasks.

E.1. Accident Prevention Program

Envirocon's Health and Safety Program Manual serves as the primary accident prevention program document. This HASP further develops the task-specific procedures to prevent accidents at the site. Beyond these documents, the accident prevention program is an ongoing process which involves the participation of all personnel through hazard identification, hazard analysis and hazard control. Refer to Envirocon's Health and Safety Program Procedure 14 "Correcting Unsafe Conditions and Work Practices."

E.1.a. Elements of the Accident Prevention Program

The accident prevention process at this site includes a number of ways to identify hazards and develop appropriate controls. They include the following programs and procedures.

Proper planning. There are a number of planning process which take place prior to execution of a given task. Based on many other plans and programs, Envirocon and the client have developed a HASP for the site.

Activity Hazard Analysis (AHA). The planning and hazard assessment process continues into the individual job task through the use of AHA. AHAs shall be developed for all significant work tasks associated with this project. New tasks, or previously undeveloped hazards require a new AHA or redraft existing ones. AHAs are primarily a planning phase tool. As needed, this HASP may be modified in order to accommodate control requirements identified through the AHA process.

AHA's prepared as a part of this HASP (Appendix E) and their status is described in the following chart:

AHA #	Title
1	Mobilization
2	Heavy Equipment
3	Rail Removal / Rail Tie Washing Activities
4	Excavation
5	Decontamination
6	Hauling

Work place inspections. All supervisory personnel, safety officers, and competent persons shall conduct site inspections. Site inspections are intended to ensure that established plans and procedures are followed, changes in conditions are identified, effectiveness of controls are assessed, and new hazards identified.

Employee involvement. The active involvement of every employee is encouraged through the site incentives program, "time out for safety" authority, safety observer program, and daily safety briefings. Employee involvement is the cornerstone of the ZIP goal. This goal will not be met (and has no real meaning) without every employee's complete focus at all times on every task. Additionally, every employee is required to look out for their coworkers when their focus falters.

Incident investigations. Employees are required to immediately report all incidents in order to ensure a timely investigation. Incident investigation is aggressive at site in order to capture lessons learned from minor incidents and correct controls before significant accidents occur.

E.1.b. Responsibilities

Supervisors, assisted by safety and health personnel are responsible for implementing effective accident prevention processes. This includes:

- conducting required planning,
- conducting required inspections,
- aggressively investigating all incidents,
- encouraging employee participation, and
- taking a leadership role in achieving ZIP.

Employees are responsible for:

- following established procedures,
- actively participating in training processes,
- reporting all incidents immediately to their supervisors,
- positively assisting in investigations of incidents, and
- looking out for their coworkers (i.e., "buddies").

E.2. Potential Waste Hazards

Historical activities at the site and surrounding areas have resulted in extensive areas of soil contamination. The primary contaminants of concern are Libby Amphibole and visually identified hydrated biotite. The Response action is based on analytical data from 2001 through 2004, and visual mapping of hydrated biotite that was mapped in October 2001.

E.3. Chemicals Brought on Site

Envirocon anticipates bringing to the site chemicals with recognized hazards. Only quantities necessary for the performing of project tasks will be brought. All chemicals will be used in accordance with manufacturer's recommendations and the manufacturer's MSDS will be kept at the site. Each employee will be trained to the requirements of 29 CFR 1910.1200 in understanding the hazards, means of protection, clean-up protocols and other use and handling information of chemicals on site.

Envirocon anticipates bringing the following chemicals to the site:

- Conventional motor fuels, greases, lubricants and antifreeze
- Cleaning products

F. INDUSTRIAL HYGIENE PROGRAM CONTROLS

OSHA mandates programmatic controls for many hazards. This section describes the programs in place to control safety and health hazards on site.

F.1. Perimeter Site Monitoring and Sampling

Perimeter site monitoring will be performed by EMR in accordance the sampling and analyses plan provided in the contract documents. No visible dust shall be permitted to leave the exclusion zone boundary, and dust monitoring is not deemed necessary due to the wet method dust/fiber suppression engineering controls to be used during intrusive excavation activities.

F.2. Personal Monitoring

Personal monitoring will be provided by EMR in accordance the sampling and analyses plan provided in the contract documents. Analytical results will be provided and posted by EMR to maintain compliance with applicable OSHA standards.

F.3. Personal Protective Equipment

PPE shall be selected, used, maintained and stored in accordance with 29 CFR 1910 Subpart I. Engineering, administrative, and/or work practice controls shall be implemented where feasible, rather than relying exclusively on PPE for hazard control.

F.3.a. Selection and Use

Selection and use of PPE shall be based on the chemical and physical hazards associated with site contamination and the potential safety hazards associated with the work being performed. Envirocon shall maintain an adequate selection of PPE to allow working with wastes from the site. Standard PPE for contamination prevention, except for respirators, will be supplied by Envirocon for Envirocon employees.

PPE requirements will be determined by the Health and Safety Supervisor based on the latest information and monitoring results.

Maintenance and Storage

PPE (including respirators) shall be maintained and stored in a central location. Envirocon will ensure that adequate facilities for cleaning, maintenance, storage and issue are made available. Maintenance of PPE and respiratory protection shall be completed in accordance with manufacturer's instructions. Specific functions to be carried out may include:

- Storing and issuing PPE
- Maintaining and inspecting all PPE and respiratory protection
- Cleaning reusable PPE
- Disposing of used PPE

F.3.b. Summary of Basic PPE Requirements

Table F.3.b: Summary of Standard PPE					
Activity	Head/ Face	Foot (8)	Hands (10)	Respirator	Clothing
General site labor, non-intrusive support zone tasks	<ul style="list-style-type: none"> • Hard hat(2), • safety glasses(2) 	Steel toed boots	Leather gloves as needed.	none (1)	<ul style="list-style-type: none"> • Shirt w/sleeves • Long pants • high visibility vest (5)
Supervision of support zone work.	<ul style="list-style-type: none"> • Hard hat(2), • safety glasses(2) 	Steel toed boots	As needed.	None. (1)	<ul style="list-style-type: none"> • Shirt w/sleeves • Long pants • high visibility vest (5)
Decon (contaminated) soils) Soils intrusive activities	<ul style="list-style-type: none"> • Hard hat(2), • Safety glasses(2) 	Boots w/steel toes, (4) Boot covers	Leather outer gloves, nitrile or equal inner glove	Level C PAPR/APR respirator with HEPA cartridge(s)	<ul style="list-style-type: none"> • Tyvek coveralls w/hoods taped at wrists and ankles(3) • Orange vest, (high vis) (5)
Drivers	<ul style="list-style-type: none"> • Hard hat outside cab (2), • Safety glasses(2) 	Boots w/steel toes, (4)	As needed.	None. (if inside positive pressure cab)	<ul style="list-style-type: none"> • Long pants • Shirts with sleeves

Table F.3.B: Summary of Standard PPE

<i>Activity</i>	<i>Head/ Face</i>	<i>Foot (8)</i>	<i>Hands (10)</i>	<i>Respirator</i>	<i>Clothing</i>
<p>(1) Voluntary use of respirators is authorized for nuisance dusts and exposures known to be below PEL levels. For nuisance dust use disposable N, R or P 95 or better (dispose of N or R types daily and P type weekly) For odors use half mask with OV or OV/P95 or better (change at start of week)</p> <p>(2) Hard hats and safety glasses are not required inside of enclosed cabs with windshields; or when working outside of the contaminated areas performing non-labor tasks such as walking to and from buildings/trailers, typing, or making notes.</p> <p>(3) Dust resistant outer coveralls such as Tyveks with "scrubs" underneath will meet this requirement. These are not allowed for use with hazardous materials.</p> <p>(4) Boot covers are a durable covering capable of resisting dust penetration which would contaminate steel toed boots.</p> <p>(5) High visibility vests are required for activities on BNSF properties.</p> <p>(6) When working with wet contaminated materials, a PVC or other equivalent water resistant outer boot covering will be used to prevent contamination of steel toed boots. Under conditions with launderable coveralls are penetrated by wet conditions they shall be similarly substituted or covered with a suitable outer water proof layer.</p> <p>(7) For purposes of preventing heat or cold stress, decon ensembles may not be torn, or worn open.</p> <p>(8) EZ wet work and decon must use a PVC steel-toed boot, or a "Fireman's overboot" but not a leather boot with cover (except for truck drivers).</p> <p>(9) Inner suit of comfort/modesty clothing (e.g., launderable hospital scrubs).</p> <p>(10) Hand protection may have two components; as a physical protector against cut/abrasions etc., and as a barrier against chemical contact. Combinations to meet these requirements should be approved through the site safety officer depending on the task, contaminants and other relevant considerations.</p>					

F.3.c. PPE Rules

All personnel are required to use the personal protection specified for their work. This may include, but is not limited to cartridge respirator, protective suit, gloves, boots, hard hat, hearing protection, safety vest and safety glasses.

All respirator use will be in accordance with Envirocon's Respiratory Protection Program and/or task-specific procedures.

Safety Boots/Shoes

- Safety steel-toed boots/shoes that meet the requirements and specifications of ANSI Z41.1 shall be worn while working in field locations.
- Boots/shoes must be in good repair and laced or fastened. Sandals and tennis-style shoes of any type shall not be worn while working.

Safety / Hard Hats

Approved safety hats that meet requirements and specifications established in ANSI Z89.1 shall be worn at all times in the field or construction zone/yard removal locations.

Safety hats are not required to be worn in vehicles (passenger cars or trucks) or offices. Safety hats are not required in construction equipment with enclosed cabs. Safety hats must be worn in all construction equipment (loaders, bobcats, excavators, dump trucks, backhoes, etc.) that do not have enclosed cabs.

Eye Protection

As a minimum, ANSI-approved safety glasses with side shields will be worn at all times when working on this site.

ANSI-approved safety glasses must be worn by an equipment operator unless the cab is a full enclosure with windows closed.

Proper eye protection (goggles, safety glasses, etc.) must be worn when working with (or in the proximate exposure area of) recognized hazards to the eyes such as wire brushing, hammering, buffing, chipping, grinding, welding, cutting wire rope, working on rust, dirty chains, cables, or handling chemicals. **If the job might result in eye injury, then eye protection is required.**

Selection of shading for brazing, cutting and welding filter lenses will be based on 29 CFR 1910.133. Shading of PPE lenses to protect against bright, ultra-violet or infra-red light may reduce visibility in normal light. Workers must remove tinted lenses when performing work or moving around in work areas when tinting is not required.

Protective measures (for personnel potentially within range of an activity that may generate projectiles or damaging radiation) may include physical shields, or tarps or relocation beyond range for the duration of the activity.

Goggles or transparent full-face shields must always be worn when grinding.

Envirocon may not provide prescription safety glasses, however, Envirocon will provide safety glasses capable of fitting over prescription glasses and manufacturer inserts for respirator corrective eyewear.

Hearing Protection

Approved earplugs or earmuffs must be worn in areas of high noise levels.

High noise level is defined as areas where noise levels exceed, or may exceed, 90 dBA. A noise survey will be conducted at each work station where a noise exposure level is anticipated to reach 85 dBA.

Safety Vests

Orange safety vests are required anytime Envirocon personnel are working on BNSF project sites or around operating equipment. This requirement applies to equipment operators whose duties involve them leaving the cab of their equipment and working in general area.

Clothing

Sleeved shirts must be worn on the job. Tank tops will not be allowed. Long pants shall be worn. Pants shall cover the work boot top. Shorts will only be allowed if they are worn under cotton coveralls or other protective clothing. Loose or ragged clothing shall not be worn.

All personnel are responsible to clean and maintain the protective equipment issued to them. Any noted defects in the equipment shall immediately be reported to the Envirocon Project Manager or the site superintendent, as appropriate.

F.4. Site-Specific Respiratory Protection

F.4.a. Documents

Envirocon's written Respiratory Protection Program is contained in Procedure 1403.016. This health and safety plan procedure serves as the task-specific procedure for the use of respirators on this project.

F.4.b. Administration

The Respiratory Protection Program Administrator is Joe Ocken, CIH.

The designated site safety supervisor for this project will serve as assistant program administrator.

Medical qualification procedures are evaluated and implemented by WorkCare, Drs. Greaney and Chan.

F.4.c. Respiratory Protection Program Objectives

Objectives of the respiratory protection program are as follows:

- Use engineering controls, and procedures to minimize the potential for exposure, and if they are not feasible, or not effective, respiratory equipment will be used.
- Make available to employees the appropriate Respiratory Protection Policy describing the issuance, cleaning, inspection, and storage of respirators.
- Ensure that respirators are inspected, maintained, sanitized, and appropriately stored.

F.4.d. Continuing Respirator Effectiveness

The assistant administrator (site safety officer) is responsible for conducting daily site inspections, including special inspections described in the inspections section of this procedure.

Daily site inspections shall include surveillance of work place conditions. In particular the following conditions shall be assessed.

- potential changes in contaminant concentration,
- changes in employee exposure or stress; and

- respirator effectiveness.

F.4.e. Respiratory Training Objectives

Specific respiratory protection training will be provided by Envirocon for employees and subcontractors who will be required to wear respirators as part of their normal job function. Respiratory Protection training will include but not be limited to:

- Proper use of respirators
- Limitations of respirators
- Emergency procedures
- Donning and doffing
- Maintenance of respirators

F.4.f. Training

Envirocon Respiratory Protection Training Procedures include the following:

- Employees may be trained using the Envirocon Respiratory Protection Program lesson plan.
- 40 hr HAZWOPER Training. Employees may be trained in a recent 40 hour or Emergency Response training courses (within the last year), or a recent 8 hour refresher training course which covers the use of respiratory protection (within the last year).
- Respirator wearers may also be trained by certified training using a lesson plan covering the new (1998) revised respiratory protection program standard.
- OSHA training (for example Hazard Communication, Respiratory Protection, Hearing Conservation etc.) that is provided in an 8-hour HAZWOPER refresher will be documented and placed in each employee's training/medical file.

F.4.g. Voluntary Use of Respirators

The voluntary use of respirators by employees (e.g., for control of odors or nuisance dusts) must be qualified. Voluntary use of respirators is only allowed in areas characterized as not requiring respiratory protection. The specific type of respirator and conditions of use must be approved by the Director of Health and Safety. Voluntary use of respirators must otherwise be in accordance with this procedure.

Employees voluntarily using respirators must be trained in the information provided in Appendix D to Sec. 1910.134 "Information for Employees Using Respirators When Not Required Under the Standard." Voluntary use of disposable nuisance dust masks does not require medical evaluation. Voluntary use of these masks does not require a fit test.

F.4.h. Medical Qualifications.

Respirator wearer's shall be medically evaluated by a company designated physician or other licensed health care professional (PLHCP).

Envirocon's PLHCP is Drs. Greaney and Chan of Workcare.

Dr. Greaney will be assisted in these duties by a local PLHCP. Local PLHCPs will also be licensed physicians. Fitness to wear respiratory protection will be determined by the local PLHCP and reviewed by Dr. Greaney.

F.4.i. Fit Testing

General requirements

- Before an employee uses any respirator with a negative or positive pressure tight-fitting facepiece, the employee must be fit tested with the same make, model, style, and size of respirator that will be used.
- Positive pressure (i.e., pressure-demand mode) supplied air respirators (SAR) or self contained breathing apparatus (SCBA) with tight-fitting facepieces are included in this requirement.
- Unless noted otherwise, fit test shall be administered using an OSHA-accepted Qualitative (QLFT) protocol.
- Fit testing of tight-fitting atmosphere-supplying respirators and tight-fitting powered air-purifying respirators shall be accomplished by QNFT or QLFT.

Tight-fitting atmosphere-supply & powered air-purifying respirators

Fit testing of tight-fitting atmosphere-supplying respirators and tight-fitting powered air-purifying respirators shall be accomplished by performing quantitative or qualitative fit testing in the negative pressure mode, regardless of the mode of operation (negative or positive pressure) that is used for respiratory protection.

Qualitative fit testing of these respirators shall be accomplished by temporarily converting the *respirator user's actual facepiece into a negative pressure respirator with appropriate filters*, or by using an identical negative pressure air-purifying respirator facepiece with the same sealing surfaces as a surrogate for the atmosphere-supplying or powered air-purifying respirator facepiece.

Quantitative fit testing of these respirators shall be accomplished by modifying the facepiece to allow sampling inside the facepiece in the breathing zone of the user, midway between the nose and mouth. This requirement shall be accomplished by installing a permanent sampling probe onto a surrogate facepiece, or by using a sampling adapter designed to temporarily provide a means of sampling air from inside the facepiece.

Any modifications to the respirator facepiece for fit testing shall be completely removed, and the facepiece restored to NIOSH-approved configuration, before that facepiece can be used in the workplace.

Envirocon fit testing will be done in accordance with the OSHA-accepted QLFT and QNFT protocols and procedures are contained in Appendix A of 29 CFR 1910.134.

F.4.j. Fit Testing Period.

Fit test results are good for a period of one year.

If an employee using a tight-fitting facepiece respirator will be assigned a different respirator facepiece (size, style, model or make) the fit testing must be repeated.

Fit test results are voided whenever the employee, a supervisor, a safety officer, the PLHCP, or program administrator makes visual observations of, changes in the employee's physical condition that could affect respirator fit. Such conditions include, but are not limited to:

- facial scarring,
- dental changes,
- cosmetic surgery, or
- an obvious change in body weight.

F.4.k. Use of Respirators.

Employees are not allowed to use respirators with tight-fitting facepieces with:

- facial hair that comes between the sealing surface of the facepiece and the face or that interferes with valve function; or
- any condition that interferes with the face-to-facepiece seal or valve function.

If an employee wears corrective glasses, Envirocon will obtain the appropriate spectacle kit and have it fitted with prescription lenses. Employees are required to perform a fit check when donning all tight-fitting respirators.

F.4.l. General Inspection and Repairs

Inspection requirements

- All respirators used in routine situations shall be inspected before each use and during cleaning.
- All respirators maintained for use in emergency situations shall be inspected at least monthly and in accordance with the manufacturer's recommendations, and shall be checked for proper function before and after each use.
- Emergency escape-only respirators shall be inspected before being carried into the workplace for use.
- Self-contained breathing apparatus (SCBA) shall be inspected monthly.

Repairs

Respirators that fail an inspection or are otherwise found to be defective are removed from service, and are discarded or repaired or adjusted in accordance with these procedures:

Repairs or adjustments to respirators are to be made only by persons appropriately trained to perform such operations.

Repairs shall be made using only the respirator manufacturer's NIOSH-approved parts designed for the respirator.

Repairs shall be made according to the manufacturer's recommendations and specifications for the type and extent of repairs to be performed.

Reducing and admission valves, regulators, and alarms shall be adjusted or repaired only by the manufacturer or a technician trained by the manufacturer.

Employees shall inspect their respirator carefully and paying particular attention to:

- exhalation valve(s),
- inhalation valve(s),
- tightness of components,
- elasticity of components,
- look for missing components,
- look for cracked components,
- look for missing cartridge gaskets;
- look for damage to cartridges (in particular the seat that seals with the cartridge gasket); and
- ensure that all filters, cartridges and canisters used are labeled and color coded with the NIOSH approval label and that the label is not removed and remains legible.

F.4.m. Respirator Cartridges Changes

Respirator cartridges shall be changed

- in accordance with manufacturer's recommendations, and
- as prescribed by this HASP or Activity Hazard Analysis (AHA).

The change-out schedule for respirator canisters/cartridges will adhere to the following logic. Combination cartridges shall follow the more conservative of criteria for particulate and organic vapors.

For any particulate filtering respirator the cartridge must be changed at least every fifth day of respirator wear, or earlier if breathing becomes difficult due to increased cartridge resistance.

If the potential organic contaminants have a boiling point $> 70^{\circ}\text{C}$ and the concentration is less than 20 ppm, a service life (for organic vapor cartridges) will be 40 hours at a normal work rate.

If the potential organic contaminants have a boiling point $> 70^{\circ}\text{C}$ and the concentration is less than 200 ppm, a service life will be 8 hours at a normal work rate.

Any report by an employee (using a well-fitting and properly maintained respirator) that they can detect the odor of vapors while respirator is being used on this schedule will reduce the service life for organic vapor cartridges by 20% for all wearers.

- Note: When humidity is at or above 85%, a 50% reduction in service life will be put into effect until humidity levels are again less than 85%.

F.4.n. Cleaning and Disinfecting.

Cleaning

Whenever respirators are doffed, employees shall wash their faces and respirator facepieces in order to prevent eye or skin irritation. Cleaning shall be accomplished by using soap and water or equivalent cleaning solutions.

Disinfecting requirements

Respirators issued to more than one employee shall be cleaned and disinfected before being worn by different individuals.

Respirators maintained for emergency use shall be cleaned and disinfected after each use.

Respirators used in fit testing and training shall be cleaned and disinfected after each use.

Respirators used by a single individual shall be disinfected at least weekly.

F.4.o. Storage

All respirators shall be stored to protect them from damage, contamination, dust, sunlight, extreme temperatures, excessive moisture, and damaging chemicals.

All respirators shall be packed or stored to prevent deformation of the facepiece and exhalation valve.

Emergency respirators shall be:

- kept accessible to the work area;
- stored in compartments or in covers that are clearly marked as containing emergency respirators; and
- stored in accordance with any applicable manufacturer instructions.

F.4.p. IDLH atmospheres

Entry into an IDLH atmosphere is not permitted.

F.4.q. Site Inspections

The site safety officer is responsible for conducting certain site inspections on a routine basis.

Program inspections

Site inspections will be conducted daily.

The site safety officer is responsible for these inspections, including special inspections described in the inspections section of this procedure.

Daily site inspections shall include surveillance of work place conditions. In particular the following conditions shall be assessed.

- potential changes in contaminant concentration,
- changes in employee exposure or stress; and
- respirator effectiveness.

F.5. Heat Stress

The site heat stress program shall be enforced prior during periods when the ambient temperature of 70°F. Training shall be accomplished prior to implementation.

F.5.a. Training.

All site personnel shall be trained in the hazards and controls of heat stress prior to the onset of hot weather. Training will include identifying signs and symptoms of heat stress (e.g., muscle spasms, dizziness, lack of perspiration) in fellow workers and themselves.

F.5.b. Acclimatization.

Personnel become acclimatized in about 7 to 10 days (and lose acclimatization in about the same period of time). Extra attention should be given during transitional weather and to new employees that are not used to heat stressful conditions.

F.5.c. Fluids.

Workers shall be encouraged to increase consumption of water. Cool or cold water shall be used to enhance palatability and consumption. Electrolyte-containing beverages may also be used to encourage consumption.

F.5.d. Shelter.

Shelter from radiant heat (i.e., shade) shall be available for ground laborers exposed to direct sunlight (i.e., radiant heat loading) during conditions of heat stress. Shelter does not necessarily require air conditioning, and air conditioning may actually be uncomfortable for employees working in heat stressful conditions.

F.5.e. Clothing.

Every effort should be made to minimize PPE requirements which may increase the heat stress of personnel without a commensurate gain in personal protection.

F.6. Cold Stress

To minimize cold related illnesses, site supervisors are to be aware of the symptoms and environmental conditions that lead to cold-related illnesses. Appropriate steps shall be taken to take to prevent their occurrence of these illnesses. This procedure describes the causes, symptoms, treatment and/or prevention of cold-related illness.

F.6.a. Thermal Balance.

When the temperature of the surrounding air or water are cooler than the worker, the body's physical processes must increase to maintain thermal balance.

Shivering is the body's attempt to generate increased heat.

F.6.b. Cold Stress Symptoms.

Common (but unreliable) symptoms

Shivering, pain, and numbness, although commonly associated with cold stress, **are not trustworthy indicators** to cold exposures!

The reason you should not trust these is because prolonged cold exposure numbs all body sensations.

If these symptoms are detected, cold stress should be suspected.

The lack of these symptoms **DOES NOT rule out** the possibility of cold stress.

Wind-chill temperature is a better means of evaluation as it takes into account the wind's ability to strip heat from the body through convection.

Water conducts heat away from the body much faster than air. Personnel are especially exposed to a cold stress hazard when performing spill clean-up in boats or around open water in cold weather situations. Falling into cold water can rob body heat very quickly.

Clothing that is wet with perspiration (as well as from water contact) will cause heat loss through conduction.

F.6.c. Cold Injury

Trench Foot.

Cause: Occurs as a result of extended exposure of the feet to cold and moisture.

Injury: Capillary walls of the feet are injured, resulting in tingling, itching and pain.

Recognition: Blisters may form followed by ulceration of the skin.

Frost-Nip.

Cause: Is a localized superficial freezing of extremities such as ears, nose, toes, and fingers.

Injury: Worker experiencing frost nip are susceptible to future injury and should avoid chilling.

Recognition: Initially there is a dark bluish color due to bleeding under the skin which at times can become gangrenous.

Frostbite.

Cause: Frostbite occurs when the moisture in the skin actually freezes, forming ice crystals, resulting in the damage of skin cells. The ears, nose, toes and fingers are most susceptible because of poorer circulation in these areas. The body may shut down flow to the extremities in order to maintain warmth in body core areas.

Injury: Tissues are destroyed when bodily fluids turn to ice. Damaged area can become gangrenous resulting in the loss of tissue, finger tips and toes.

Recognition:

- A burning pain is noted initially, then pain decreases and numbness sets in.
- The injured area becomes red, then blue/red.
- The skin becomes waxy pale in appearance because of lack of oxygen.

Hypothermia.

Cause: Occurs when heat production of the body is not sufficient to replace heat lost to the environment.

Injury: The core body temperature is lowered and the pulse rate slows. Metabolic processes in the body are finely tuned to perform at normal body temperature. As the temperature is lowered, muscular weakness occurs, mental abilities dull and the worker becomes uncoordinated. Cardiac arrest follows if core temperature continues to fall.

Recognition:

- Signs of hypothermia are evident at 95 degrees F body core temperature.
- Consciousness is lost between 89.6 - 86.0 degrees F.
- At lower core temperatures, cardiac arrest is possible.
- Exposure to cold water decreases the body core temperature rapidly and consciousness is quickly lost.
- Workers on or over water should be acutely aware of the danger of immersion during cold weather.
- Hypothermia results in dulling of senses and could result in poor decision making.

F.6.d. Prevention

Training and Recognition.

Prevention of cold stress is, in many ways, similar to preventing heat stress. Training and recognition of the hazard is especially important.

All personnel will receive training on the cause, symptoms, and most importantly, methods of prevention of cold stress injuries.

Clothing.

Prevention of hypothermia and other cold injuries is best accomplished by protecting workers from cold and moisture.

Clothing is the most important factor in prevention of injury.

Personnel working on land should layer clothing with outer layer being wind and water resistant.

The layers should be capable of being vented at wrist, neck and waist to reduce wetting by perspiration.

Protect extremities that have poor circulation.

Keep head and face covered.

Wear insulated foot wear, keep socks dry (bring extra socks as needed).

Gloves are extremely important.

Never allow bare skin to contact metal surfaces at sub-zero temperatures.

Acclimatization.

Do not count on acclimatization.

A limited degree of acclimatization can occur from exposure and working in cold environments.

Some physiological changes do occur but people also learn how to more effectively protect themselves from temperature extremes.

Fluid Replacement.

As with heat stress, blood circulation and heat transfer is critical to dealing with cold temperature extremes.

Cold weather causes significant water loss as a result of the dryness of the air.

Fluid intake should be increased to prevent dehydration which directly affects blood volumes and flow to the extremities.

Warm, sweet, caffeine-free, nonalcoholic drinks and soup offer the best fluid replacement and provide caloric energy.

Work-Rest Regimens.

When temperatures are less than 20 degrees F (actual or windchill) heated warming shelters should be made available.

Workers should use these on regular basis. See Table I at the end of this procedure for guidelines for scheduling breaks.

Diet.

As with any work in extreme temperatures, personnel will be instructed to eat a well-balanced diet to replace calories burned and provide necessary vitamins and nutrients.

Environmental Monitoring.

Regular monitoring of the environment by recording wind speed and actual thermometer readings for comparison to the windchill chart should occur at regular intervals depending on conditions. See Table I at the end of this procedure for wind chill equivalents.

Prohibited Activities.

Alcohol should not be consumed since it increases blood circulation to the skin and interferes with internal thermostatic control. Alcohol also interferes with mental acuity which can lead to risk taking.

Cigarette smoking should be prohibited since the nicotine restricts flow of blood to the extremities.

ACGIH TLV Guidelines:

The current edition of the American Council of Governmental Industrial Hygienists' Threshold Limit Values (TLV) provides a reference on cold stress prevention.

Some of the TLV information is summarized in the following Table I.

F.6.e. Treatment of Injuries

Trench Foot, Frost-nip and Frost Bite.

These injuries require immediate response, including removal of the individual from a cold environment, the gradual warming of the affected areas, having the victim not use the affected limbs, (drive victim or carry, do not allow the victim to walk).

Obtain immediate medical attention as these types of injuries become more severe as exposure progresses.

AVOID RAPID WARMING OF EXTREMITIES.

Hypothermia.

Hypothermia is a life threatening condition that requires immediate response. Remove victim to a warm area. The individual may be disorientated and unable to talk clearly or understand you.

Help the individual to a warm place and wrap them in warm blankets or bathe them (if possible) in warm (not hot) water.

If they are conscious give hot (non-caffeine) liquids to drink.

Summon immediate medical attention. **UNTREATED HYPOTHERMIA CAN LEAD TO VENTRICULAR FIBRILLATION (HEART ATTACK) AND DEATH.**

F.7. Hazard Communication Program

The Envirocon Program, in its entirety, is located in a separate labeled notebook in the Envirocon Project facility. The notebook is available for review by employees at any time during normal work shift. Envirocon will be responsible for maintaining a copy of their Hazardous Communication Program and MSDSs on site.

F.7.a. Subcontractors

Subcontractors will be responsible for keeping an individual copy of their respective programs.

F.7.b. Material Safety Data Sheets (MSDSs) and Inventory Sheet

MSDSs will be located in a separate labeled notebook in the Envirocon Project Trailer. MSDSs will be available to all employees for review during the work shift.

An inventory sheet identifying all chemicals brought onto the site will be included in the front of the MSDS notebook.

F.7.c. Container Labeling

All containers received on site will be inspected to ensure the following:

- All containers clearly labeled;
- Appropriate hazard warning; and

- Name and address of the manufacturer.

F.7.d. Employee Training and Information

Prior to starting work, each employee will attend a health and safety orientation and will receive information and training on the following: An overview of the requirements contained in the Hazardous Communication Program. This training shall include at a minimum the following:

- Hazardous chemicals brought to the site for the project;
- The location and availability of the written Haz Comm Program;
- Physical and health effects of the hazardous chemicals;
- Methods of preventing or eliminating exposure;
- Emergency procedures to follow if exposed;
- How to read labels and review MSDSs to obtain information; and
- Location of MSDS file and location of hazardous chemical list.

F.7.e. Documentation of Training

Documentation of initial training to the components of the Hazard Communication Program will be maintained in the individual training files maintained on site.

G. SITE SAFETY PROCEDURES

This section addresses safe work practices and task-specific safety procedures that will be used to control hazards on site.

G.1. Code of Safe Work Practices

Every employee has a responsibility to ensure that the program proceeds efficiently and safely. The following procedures constitute the basic safe work practices expected of every employee.

G.1.a. Conducting Yourself in a Responsible Manner

- Perform all tasks in a safe and approved manner.
- Do not direct an air hose at another person. Do not use compressed air to remove debris from clothes, hair, or any part of the body.
- Honor the barricades erected by other contractors on the job site.
- Do not work while your ability or alertness is so impaired by fatigue, illness, or other causes that they might unnecessarily expose yourself or others to injury.
- Workers shall not handle or tamper with any electric equipment in a manner not within the scope of their duties, unless they have received instructions from a qualified, licensed electrician.
- Do not use any form of solvent, gasoline or kerosene for cleaning hands or clothing. Use soap and water or other cleansers intended for the purpose.
- Use handrails when climbing or descending stairs and walkways.
- Do not run, except as necessary in an emergency.
- Do not jump (e.g., climb off equipment using three points of contact, walk down stairs, use platforms to cross trenches).
- Always stand on an approved ladder to remove articles that may out of reach from floor level. Do not stand on chairs, boxes, or other makeshift devices.
- Loose or frayed clothing, loose or hanging long hair, dangling ties, finger rings, etc., shall not be worn around moving machinery or other areas where they may become entangled.
- Do not improperly use, mishandle, or tamper with health and safety equipment and sampling devices.
- Personnel shall not drop or throw any articles or materials of any kind unless a specific procedure has been developed to do so safely.

G.1.b. Participate in Safety Programs

There are a number of ways for you to influence the safety on site. Don't just complain about problems, participate in your own safety.

- Attend each day's work briefing as scheduled.
- Attend all required safety meetings, training, or briefings.
- Complete safety observer reports when you want to make a suggestion, observe a commendable act of safety or quality, take a "time out for safety" to correct an unsafe act or condition.
- Approach every task with incident free performance in mind ... ZIP!
- Ask questions when you are uncertain about a procedure or equipment use.
- Participate in the evaluation or investigation of any accident or incident when you are requested to do so.
- If you fear reprisal use the Envirocon safety Hotline 800-224-7389.

G.1.c. Supervisors Play a Leadership Role in Safety

As with all aspects of conducting operations, the supervisor is ultimately responsible for carrying out work in accordance with company policies and procedures, and in accordance with the specifications and applicable regulations.

- Take a leadership role in establishing safety a safety culture on site.
- Give employees frequent accident prevention instruction and encouragement.
- First through encouragement and incentives, ensure that employees observe and obey all applicable Company, State or Federal regulation and order as is necessary to the safe conduct of the work. When necessary, compliance must be compelled using progressive disciplinary measures described in this document.
- Ensure that employees are qualified for the work they are assigned.
- No one shall knowingly be permitted or required to work while the employee's ability or alertness is so impaired by fatigue, illness, or other causes that they might unnecessarily expose the employee or others to injury.
- Daily "tailgate" safety meetings shall be held to discuss safety concerns, instruct on new procedures, and discuss lessons learned from investigations and other related safety topics.
- Encourage and listen to the suggestions of all employees.
- All work shall be thoroughly planned and supervised to prevent injuries in the handling of materials and in working together with equipment.
- Inspect the site daily.
- Investigate all incidents.
- Ensure thorough documentation of all aspects of the safety program.

G.2. Employee Participation

This project has established a variety of procedures to encourage the participation of employee in their own safety. Employee participation includes all Envirocon, and lower tier subcontract personnel.

G.2.a. Training

Training is required for each employee before starting any new task or working in a new area. Training is considered an employee participation process. Employees are encouraged to ask questions and utilize training sessions to familiarize themselves with procedures.

G.2.b. Daily Safety Briefing

Each day's work begins with a safety briefing. These briefings shall be conducted in a manner to encourage employee participation.

Supervisors shall report the plan of the day for all employees. This should include other work that may occur near the project site or impact on project work. Special tasks expected for the day.

- Discuss lessons learned from incidents on this site or others.
- Report and discuss safety observations made by employees.
- Report and discuss times out for safety.
- Discuss employee suggestions.
- Recognize safety performance (good and unsatisfactory).

G.2.c. "Time Out for Safety" Authority

The "time out for safety" authority is intended to encourage employees to take initiative in correcting unsafe conditions or behaviors. Where an unsafe condition or behavior poses an imminent threat that can be readily addresses without a change in procedure or policy, each employee is authorized to correct the situation or report the issue. If the unsafe condition can not be readily corrected, your supervisor should be notified to have it corrected. Examples:

- Stop another employee that is driving into the wrong direction.
- Grab a roll of barrier tape to mark a broken step on a stairway and report it to your supervisor.
- Moving several boxes blocking the access to an eye wash.
- Flagging traffic around a spill until a response crew arrives.

G.3. Safety Procedures for General Labor and Mobilization Tasks

G.3.a. Good Housekeeping

Housekeeping is the hallmark of employees who care about their site and their safety:

- Keep your work area clean and orderly.
- Good housekeeping practices shall be maintained continually.
- Keep work, storage, and access areas clean of tools, equipment, and debris.
- All means of egress shall be kept unblocked, kept clear of debris and slip or trip hazards, kept well lighted, and kept unlocked at times.
- Clean up or otherwise remove slip/trip/fall hazards immediately.

- Do not leave boards with protruding nails or other loose material on the floor where they may be stepped on.
- Keep aisles and walkways clear of electrical and telephone cords.
- Do not overload electrical outlets.
- Electric cords shall not be exposed to potential damage from vehicles.
- Mark or barricade slip/trip/fall hazards that can not be removed.
- Any time work is performed overhead, barricades shall be erected.
- Barricades shall consist of caution (yellow) or danger (red) barricade colors and appropriately worded tape or signs.
- All barricades shall be removed when not in use.

G.3.b. Follow Standard Procedures

Hazardous waste operations involve a number of standard procedures which are particularly important. Make these procedures a habit.

- Use the Buddy System when performing operations in hazardous areas; when working with hazardous contaminants; when physical capabilities may become stressed (heat stress); or working in proximity of operating machinery or equipment.
- Practice contamination-avoidance techniques.
- Enter and exit the Exclusion Zone (EZ) and the Contamination Reduction Zone (CRZ) through designated areas.
- Complete sign-in/out logs when required.
- Do not eat, drink, chew tobacco or gum, smoke, or engage in any other activity that may increase the possibility of hand-to mouth contact in the EZ or the CRZ. (Exceptions may be permitted by the Project Health and Safety Manager (PHSM) for other reasons, such as to allow fluid intake during heat stress conditions.)
- Do not use lighters or matches in the EZ and CRZ.
- Employees under a physician's care and/or taking prescribed narcotics must notify the designated site safety supervisor.
- Lift material in a safe manner and avoid strains. Bend your knees, keep your back straight, and push upwards with your legs when lifting. The lifting of heavy and bulky objects will normally be done by or more shop personnel. Lifting heavy/bulky objects improperly can result in needless injury.
- Get help (mechanical help or more people) when lifting heavy or awkward materials.
- Wear the personal protective equipment (PPE) specified in the site HASP, including hard hats, steel toed boots, and safety glasses that must be worn at all times in active work areas.
- If you are required to wear a respirator, remove facial hair (beards, long sideburns, or mustaches) that may interfere with the satisfactory fit of the respirator mask.

- Use safety devices provided for your protection (e.g., handrails, guards, pressure relief valves, and seat belts). Do not remove these devices while the equipment is being operated.
- Never approach within 25 feet of the operating area of a piece of equipment without first making eye contact with the operator, signaling your intention, and receiving an acknowledgement from the operator. If you wish to approach the equipment (e.g., to speak with the operator) the operator must first lower all buckets, blades, etc. and idle the engine before you approach.
- When ground personnel support heavy equipment, pay particular attention to pinch points (e.g., the counterweight swing radius and the tracks of an excavator). Keep out from under suspended loads.

G.3.c. Follow Safety Procedures

In addition to standard procedures, there will be many site specific procedures to learn and follow. You need to learn these from your task-specific training and follow the procedures. If you feel the procedures are incorrect or inadequate it is improper to take it upon yourself to modify procedures. Ask your supervisor, make suggestions, or raise questions during planning and training.

- Attend, pay attention, and ask questions during procedure training and briefings.
- Implement, adhere to, and follow established rules, guidelines, procedures, plans, etc., as specified.
- Follow proper decontamination procedures.
- Make sure fall protection or fall arrest systems are in place when working at elevations greater than 6 feet above the surrounding work area.
- Follow the work-rest regimens and other practices required by the heat stress program.
- Where appropriate, lockout procedures shall be used.
- Employees shall not work under vehicles supported by jacks or chain hoists without protective blocking that will prevent injury if jacks or hoists should fail.
- Obey all authorized safety signs and demarcations. Do not place or remove these items except as authorized by the Site Health and Safety Supervisor (HSS).
- Become familiar with the on-site hazards, work zones, PPE requirements, and decontamination methods.

G.3.d. Permit Required Procedures

Many of the most important procedures dealing with the most dangerous hazards involve permit requirements to ensure that necessary precautions are taken before work begins. Pay particular attention to these procedures.

- Do not enter a permit-required Confined Space without a permit, and follow all requirements of permits as issued.
- Don't rely on postings to warn you of confined space hazards. When in doubt ask for a permit and testing. Manholes, underground vaults, chambers, certain confining excavations, tanks, silos or other similar spaces may have a confined space hazard.

- Check with your Supervisor prior to starting any Hot Work operation (welding or cutting operations) and, if you are working in an area that requires a Hot Work Permit, follow the permit as issued.
- Depending on the fire hazards at your facility, hot work permits may be required for use of cigarette lighters, electrical equipment that is not intrinsically safe, flash photography, motors, engines, or spark producing metal tools.
- The combination of hot work and confined spaces is particularly dangerous even if you don't plan to enter the space! No burning, welding, or other source of ignition shall be applied to, or near any enclosed tank or vessel, even if there are some openings, until it has first been determined that no possibility of explosion exists and authority for the work is obtained from the foreman or superintendent. This includes small voids too! A sealed can, doubler space, storage compartments or similar small spaces can contain flammable debris or explosive vapors.
- Do not dig or drive objects into the ground without first ensuring that a utility locate has been performed.
- Check excavations daily for slope stability and air quality. Do not enter an excavation unless authorized by the HSS and/or excavation competent person. Maintain safe means access and egress from all excavations.
- Follow lockout/tagout procedures when working on equipment involving moving parts or hazardous energy sources. Install and remove locks and tags only in accordance with procedure and only when authorized.

G.3.e. Use Tools Properly

Tools, especially hand tools, are used frequently with minimal supervision. It can be all too easy to use tools improperly and create serious safety hazards.

Use all tools in the manner intended and/or prescribed. The operating instructions for all tools and equipment *ARE MANDATORY*.

Modification of use or design must be in accordance with the written instructions or permission of the manufacturer.

Do not suspend tools or any other items using electrical cords.

In locations where the use of a portable power tool is difficult, the tool shall be supported by means of a rope or similar support of adequate strength.

Air hoses shall not be disconnected at compressors until the hose line has been bled.

Inspect safety devices before every use including but not limited to:

respirators,

personal protective equipment,

body harnesses,

lanyards,

monitors,
fire extinguishers,
confined space retrieval systems (not the same as fall protection harnesses), and
manbaskets.

Inspect other tools and equipment before use.

Inspect power tools, looking especially for damaged insulation or missing ground plugs on electrical cords.

Inspect cutting devices looking especially for properly sharpened and guarded edges.

Inspect hand tools look especially for chisels, hammers and punches with mushroomed heads; files without handles, and hammers with broken handles.

Do not use defective equipment.

Don't leave defective equipment in service for others to use. Remove it from service and report the problem to your supervisor.

At a minimum, defective equipment must be tagged out of service.

Use a red tag placed near starting switches or levers.

Describe the reason the equipment is tagged out.

Write your name and the date on the tag.

Alternatively, defective equipment can be taken out of service by destruction and disposal.

Use ground fault circuit interrupters (GFCI) for cord and plug equipment used outdoors, in damp locations, or when equipment is not plugged directly into permanent wiring.

Use only extension cords rated for hard service or junior hard service (e.g., SO, JSO, SOW, JSOW). A UL label on a local hardware store flat cord is probably *NOT* rated for this service!

Keep electrical cords out of walkways and accumulations of water unless protected and rated for such service.

G.3.f. Operate Equipment Safely

All equipment is to be operated in accordance with manufacture's written instructions and/or manuals.

Equipment shall not be modified or operated out of specified limits without written permission from the manufacturer and the health and safety manager for the project.

Only trained and authorized persons shall operate machinery or equipment.

Do not operate equipment unless you are properly trained and authorized to do so in a manner consistent with the owner/operators manual.

DO NOT use a piece of equipment, which has been tagged out of service! Do not remove red tags without authorization from the person placing the tag or the person responsible for the repairs.

Inspect equipment before using it.

Heavy equipment inspections shall be documented. Note all discrepancies and tag out equipment that may be dangerous to operate.

Red tags must have a description of the reason for the tag, the name of the person placing the tag, and the date the tag was applied.

Machinery shall not be serviced, repaired, or adjusted while in operation, nor shall oiling of moving parts be attempted, except on equipment that is designed or fitted with safeguards to protect the person performing the work.

Use vehicle or equipment seat belts any time the vehicle or equipment is in motion.

Excavating equipment shall not be operated near tops of cuts, banks, or cliffs if employees are working below.

Do not maneuver equipment into the working area of other equipment without first making eye contact with the operator working in the area and signaling your intentions to maneuver into that area.

Always acknowledge that you understand that other equipment or ground personnel may enter your working area.

Do not allow people on foot to approach without lowering hydraulically lifted or suspended components (e.g., buckets, blades, bellies) and reducing engine speed to idle.

Tractors, bulldozers, scrapers, and carryalls shall not operate where there is a possibility of overturning in dangerous areas such as the edges of deep fills, cut banks, and steep slopes.

Do not allow supporting ground personnel to work within pinch points of the equipment (e.g., the swing radius of a counterweight and the tracks on an excavator) or under suspended loads.

G.3.g. Be Prepared for Incidents

Become familiar with the emergency response plan so that you can respond properly in an emergency.

Become familiar with the locations and types of emergency equipment, such as fire extinguishers, emergency showers, or air horns.

Report all incidents to your supervisor immediately!

Participate fully and truthfully in incident investigations.

G.4. Intrusive Work (including excavations and drilling)

The OSHA standards for excavation safety (29 CFR 1926, Subpart P) shall be followed at all times during excavation activities. Excavations include "any man-made cut, cavity, trench, or depression in an earth surface, formed by earth removal." This standard applies regardless of the depth of the excavation, for example utility locates should be done at any depth.

G.4.a. Excavations (5 feet or deeper that personnel will be entering)

In excavations 5 feet deep or deeper, a competent person shall ensure that the following requirements are met.

Table G.4.a Excavation Sloping Requirements

SOIL OR ROCK TYPE	EXAMPLES	MAXIMUM ALLOWABLE SLOPE HORIZONTAL TO VERTICAL FOR EXCAVATIONS LESS THAN 20 FEET DEEP (1)
Stable Rock		Vertical (90 Degrees)
Type A Cohesive	Clay, Hardpan, Silty Clay	3/4 : 1 (53 degrees)
Type B Cohesive/Granular	Silt, Unstable Rock, sandy Loam, Fissured type A	1 : 1 (45 degrees)
Type C Granular	Gravel, Submerged, Loamy, Sand	1.5 : 1 (34 degrees)

(1) Excavations greater than 20 feet deep must be designed by a PE.

Provide safe access and egress. This includes ladders or ramps. In trenches, a point of egress must be within 25 feet at all times while in the trench. Ramps shall be sloped so as not to require the use of hands to walk out of the excavation.

Employees must be protected from cave-ins.

In trench excavations the competent person must have all sides sloped in accordance with OSHA requirements on either side of the trench where personnel are working.

In excavations, at a minimum, employees within a distance equal to the depth of a cut face shall be protected. Where employees are in excavating equipment, at a minimum, the equipment shall not undercut a face in such a way that the cab is closer than the height above the cab.

Alternative protections, specified by OSHA include trench boxes or shoring.

In excavations where employees may be required to enter, excavated or other materials shall be effectively stored and retained at least 2 feet or more from the edge of the trench.

G.4.b. Water

Whenever, groundwater may be encountered; a specific classification and slope adjustment will be made on site by the Competent Person. At a minimum an additional 1/2 to 1 slope will be added if flowing conditions are encountered at the toe of the slope where personnel are working.

G.4.c. General Excavation Practices

In excavations with potential airborne vapor hazards, where employees may be required to enter shall have the atmosphere tested before each entry and as conditions change.

Employees exposed to vehicular traffic shall be provided with and instructed to wear warning vests made of reflective or high visibility materials.

All employees in trenches shall wear the appropriate PPE, e.g., hard hats, safety glasses, hard-toed boots, etc.

No employees will be permitted under loads.

Dust conditions shall be kept to a minimum in accordance with the project dust control plan.

Where employees or equipment are allowed to cross over excavations, all walkways and/or bridges will have guardrails.

Adequate barrier protection will be provided at remotely located excavations (e.g., reflective cones or sawhorse barriers).

Each excavation must be inspected daily. If evidence of cave-ins or slides is apparent, all work in the excavation must cease until necessary precautions have been taken to safeguard employees.

Where vehicles or equipment operate near excavations or trenches, the sides of the excavation must be shored or braced as required to withstand the forces exerted by the superimposed load.

G.4.d. Utility Lines

Utility lines, both above and below ground, must be addressed in any excavation activity regardless of depth.

Be aware and always suspect the existence of underground utilities such as electrical power, gas, petroleum, telephone, sewer and water. Underground utilities are a concern at any depth.

Overhead and buried utilities should be located, noted and emphasized on all excavation and work plans (regardless of depth of excavation). Post warning barricades on the ground along the line of excavation in order to alert excavating equipment approaching overhead utilities.

When excavating within 6 feet of buried utilities, first locate and mark the expected location. Due to the inaccuracies of locating, hand digging (i.e., potholing) will be used to visually confirm the utility location before using heavy equipment.

When excavating within 6 feet of underground utilities, a spotter shall be used to assist mechanical excavating equipment in locating utilities.

When excavating within 5 feet of underground electrical, phone, flammable gas/liquid lines de-energize the lines. Hand-excavation shall be conducted when at 2-feet or less from the utility.

The requirements above should be taken as a minimum. High volume or high pressure mains should be given a wider margin. Fiber-optical lines should be given additional margin. High pressure or high volume water lines should be approached in the same manner as "more dangerous" utilities.

Overhead Utilities.

When overhead electrical power lines exist at or near an excavation site, consider all wires to be alive and dangerous. Support overhead utility lines as necessary. Overhead electrical lines may induce a current without actually touching the lines. Be sure to maintain clearances from electrical lines of 50 kV or greater in accordance with 29 CFR 1926.550(a)(15). Place ground markers to indicate overhead hazards as well as those below ground.

G.4.e. Competent Person.

The excavation competent persons are assigned in the organization and key personnel section earlier in this document. The excavation competent person is authorized to, and shall take prompt action to correct unsanitary, hazardous, or dangerous working conditions. Other responsibilities include (but are not limited to):

The competent person will supervise each utility locate procedure to ensure proposed areas for excavation are checked.

The competent person will directly oversee all operations and be present on site at all times while employees are in the excavation.

The competent person will make a daily inspection of the excavation area before each shift begins, after any changes in the excavation area or after a rainstorm.

The competent person will ensure that personnel in excavations will not work under suspended loads.

The competent person will ensure that work activities on the surface of the excavated area will be restricted to prevent working above personnel.

The competent person will ensure that banner guard and barriers will be placed across public access to the excavation areas at night to protect and warn personnel as necessary.

The competent person will ensure that personnel exposed to high traffic areas will wear high visibility vests; orange for daytime and reflective for night operations.

G.5. Falling and Tripping Hazards

G.5.a. Falls--Housekeeping and Materials Storage.

All material shall be stored in a manner that will ensure that the material is safe from unexpected movement, falling, rolling, blowing, or any other uncontrolled motion.

Materials and supplies shall be kept away from edges of floors, stairways and access/egress routes (36 inches minimum).

Forms and scrap lumber with protruding nails and all other debris shall be cleared from work areas, passageways, stairs, and in and around buildings or other structures.

Tripping hazards, protruding nails, oil slicks, scrap materials and other hazardous conditions occurring during the course of the job shall be eliminated as work progresses.

Tools and equipment shall not be strewn about where they might cause tripping or falling hazards and shall, at the end of each workday, be collected and stored or disposed of as appropriate.

All food waste and oily/greasy rag containers shall be equipped with tight closing lids.

G.5.b. Falls--Slippery Surfaces, Unstable Surfaces, Uneven Terrain

Wet conditions on the site caused by rain and/or work activities are likely to be encountered during the project.

Employees will be informed of the hazards associated with walking on slippery and or uneven surfaces.
Mark or remove trip hazards.

Proper foot wear will be provided to all employees involved with work activities during these conditions.

When possible, pedestrian traffic will be redirected around potentially dangerous areas.

Everyone should keep the work area and other areas where people may walk clean and orderly.

Tools, debris, and other objects should not be left on the floor, decking, or other areas where they present hazards during a job or after a job is completed.

Oil spills and slippery spots shall be cleaned up immediately.

Extra precautions should be taken when walking on steel decking during wet/icy weather and/or oily conditions.

Never walk on piping, never take dangerous shortcuts, and avoid jumping from elevated places.

G.5.c. Falls--Ladders

Personnel must visually inspect each ladder for defects before use, defective ladders shall not be used.

When working from a ladder, wear fall protection if work requires your body to extend past the margins of the ladder sides.

While ascending or descending a ladder, carry nothing which will prevent holding onto the ladder with both hands in order to maintain three-points of contact at all times.

Metal ladders will not be used if there are any existing or potential electrical hazards in the work area.

All ladders must be securely tied off or secured by an attendant while the ladder is in use.

When working from ladders, work facing the ladder with both feet on the rungs.

Workers shall not stand with their waist above the top step of a ladder without wearing a safety belt that is securely tied off to a local structure.

Short ladders shall not be spliced together to make a longer ladder.

The base of the ladder must be set back a safe distance from the vertical; approximately one-fourth the working length of the ladder.

G.5.d. Falls--Fall Protection Working from Elevated Surfaces

Duties involving heights greater than 6 feet above the ground include:

Utilize fall protection or restraint system as described in the Envirocon Fall Protection Program.

Append a task specific AHA to this plan to specify type and design of fall protection system on a case by case basis.

G.5.e. Illumination

Light plants or other sources of light shall be used as necessary to maintain the requirements described in Table D-65.1 of 29 CFR 1926.65.

G.6. Portable Tools

G.6.a. Deadman switches

Portable electrical power tools will be equipped with constant pressure switches or controls that will shut off power when the pressure is released.

G.6.b. Guards

All tools will be equipped with appropriate guards, the guards will be properly adjusted, and the guards will be replaced if they are damaged.

G.6.c. Field Modifications

Table D-65.1 of 29 CFR 1926.65: Illumination of Work Areas	
Foot Candles	Area of Operations
5	General Site Areas
3	Excavation and waste areas, accessways, active storage areas, loading platforms, refueling, and field maintenance areas.
5	Indoors: Warehouses, corridors, hallways, and exitways.
5	Tunnels, shafts, and general underground work areas. (Exception: minimum of 10 foot-candles is required at tunnel and shaft heading during drilling, mucking, and scaling. Mine Safety and Health Administration approved cap lights shall be acceptable for use in the tunnel heading.)
10	General shops (e.g., mechanical and electrical equipment rooms, active storerooms, barracks or living quarters, locker or dressing rooms, dining areas, and indoor toilets and workrooms.
30	First aid stations, infirmaries, and offices.

Hand/Powered tools may be used only for their intended purpose. The design or guard capacity shall not be exceeded or circumvented by unauthorized attachments or modifications.

G.6.d. Electrical

All portable electrical powered tools shall be double insulated or grounded.

Ground Fault Interrupters (GFCIs) will be used with all outdoor temporary wiring.

Power tools shall be hoisted or lowered by a hand line; never by the cord or hose.

G.7. Fire Prevention

G.7.a. Extinguishers

Extinguishers will be readily available on site. At a minimum, extinguishers will be placed as follows. (Extinguishers of greater size or inclusive types may be substituted).

Heavy Equipment will be equipped with a 5 # ABC fire extinguisher rated at 2-A:10-B:C.

Fuel depots and flammable liquid storage/handling areas

20# ABC fire extinguishers with a rating of 2-A:40-B:C will be provided within 75 feet of, but no closer than 25 feet to, all refueling depots and flammable storage areas.

10# ABC fire extinguishers with a rating of 2-A:40-B:C will be provided within 75 feet of, but no closer than 25 feet to, all mobile fueling stations, flammable liquid transfer areas, and generators.

Trailers, buildings and work areas

All trailers and work areas will have at least a 5 # ABC fire extinguisher rated at 2-A:10-B:C.

Extinguishers in trailers will be mounted near a clear evacuation egress point (door).

Extinguishers on site will be located at the primary entrance to the work area.

Smoke detectors will be mounted in all occupied trailers.

Access routes to fire extinguisher shall be kept clear at all times.

All fire extinguishers shall be inspected monthly and serviced annually.

G.7.b. Fighting Fires

Personnel are authorized to fight fires in the beginning stages of development and only to the extent that they judge this can be done safely. Personnel are not required to fight fires.

When a fire is detected, first ensure that the area is safely evacuated and the supervisor is being notified so that the fire department can be summoned.

Ensure your own evacuation route before attempting to extinguish a fire.

If more people or more extinguishers are needed, the effort should be abandoned.

G.7.c. Facility Systems

A task-specific procedure will be developed where project work (such as demolition) potentially jeopardizes facility systems.

Facility managers will generally be notified when any work is done on any facility systems such as fixed fire suppression systems for buildings, or where excavations encroach on facility systems such as fire hydrants or related piping.

When excavating or performing demolition near facility systems, the facility systems should be uniquely marked to avoid damaging these systems.

Facility fire hydrants shall not be used without notification and permission of the facility manager or designated representative.

G.7.d. Flammable Liquids, Fuels and Fueling

Protection of depots

Depots will be located in such a manner as to provide clear access for fire trucks.

Depots will be protected from damage from vehicle or equipment damage using bollards, bails, curbs or similar devices.

Portable containers

All portable fuel cans shall be free of deformities which threaten the integrity of the container.

All flammable storage cans of 1 gallon capacity or greater shall have self closing lids and flame arresters (i.e. safety cans).

All flammable storage containers shall be labeled as to their contents, and shall include a warning regarding flammable contents.

Gasoline engines shall not be fueled while the engine is running.

G.7.e. Containments

All equipment shall be fueled through funnels or spouts that prevent spillage. All spouts and funnels must be of metal construction.

NFPA flammables (e.g., gasoline) will not be stored in the same containment as NFPA combustibles (diesel fuels).

Containers and depot tanks in excess of 5 gallons will be held or stored in containments designed to collect spillage.

Covered containments must be capable of containing a volume equal to:

the capacity of the largest tank, plus

the combined displaced volumes of all tanks and containers stored in the containment.

Uncovered containments must be capable of containing a volume equal to:

the capacity of the largest tank, plus

the combined displaced volumes of all tanks and containers stored in the containment, plus

25 percent excess capacity for rain collection.

Uncovered containments will be kept free of standing water.

Water in excess of 5% containment capacity will be pumped off within a 48 hour period.

Water will not be discharged onto the ground unless free of visible residues or films.

Bonding and grounding

Any transfer of a flammable liquid from one container to another requires bonding from one container to the other.

All flammable fuel depot tanks set up on site will be grounded.

G.7.f. Smoking, Fire and Hotwork

Hotwork permits shall be issued for all applicable hot work according to facility requirements.

Smoking and hot work will not be allowed within 50 feet of fuel depots or other flammable liquid storage and/or transfer areas.

Fuel depots or other flammable liquid storage and/or transfer areas will be posted against smoking, open flames, or hot work.

Oily rags storage

Oily rags, trash and other combustible scrap materials shall be placed in closed receptacles separate from other trash.

Oily rags shall be stored in containers approved for this purpose.

G.7.g. Welding, Cutting, and Hotwork

General

All welding and hotwork will be done in accordance with Envirocon's Health and Safety Procedures 11.0 and 12.0;

Fire Watch

A fire watch shall be maintained for at least 30 minutes after completion of welding/cutting operations so that possible smoldering fire can be detected and extinguished.

Fire watch personnel shall be instructed in the selection and use of appropriate fire extinguishers.

Fire watch personnel shall be familiar with facilities and the procedures to be followed in the event of a fire. They watch for fires in all exposed areas and attempt to extinguish fires only when obviously within the capacity of the equipment available.

The requirement for a fire watch may be waived when, after completion of the Welding, Cutting, and Heating Permit, it has been determined that there is no possibility of sparks, slag, hot material, etc., coming into contact with flammable or combustible solids, vapors, liquids, or residues.

G.8. Lifting Heavy Objects

Heavy objects will be lifted using appropriate machinery or enough manpower as is required. Employees will be specifically instructed to seek assistance in lifting heavy objects.

G.8.a. Before Lifting:

Determine if the object can be moved by some other means (mechanical device).

Determine if the object is too bulky and would obscure vision; if so, get another person to help carry it. When handling material with others, everyone should agree on who will act as leader and give the signals. Loads should not be released until everyone is ready. Teamwork is important.

Determine if the object is within the lifter's capability (a preliminary "heft" will indicate this).

Determine if the footing around the object is solid.

G.8.b. Lifting

Legs should be bent at knees, back nearly vertical, body as close to the object as possible, feet apart but not further than shoulder width. Take a firm hold and straighten knees. Back is still straight and upright. Pull load close to body and lean back slightly to keep center of gravity over feet.

Avoid twisting the body when lifting or carrying loads.

i.

G.9. Sanitation and Hygiene

G.9.a. Drinking Water

An adequate supply of potable water will be provided on site.

Portable water containers will be capable of being tightly closed and equipped with a tap.

Water shall not be dipped from containers for drinking purposes. Single service, disposable drinking cups will be provided.

No one shall place any objects (e.g. soda pop, ice tea, etc.) in coolers.

G.9.b. Restrooms and Hygiene Facilities

From Table D-65.2 of 29 CFR 1926.65	
Number of Employees	Minimum Number of Facilities
20 or fewer	One.
21 to 199	One toilet seat and one urinal per 40 employees
200 or more	One toilet seat and one urinal per 50 employees

Toilet facilities (sanitary sewer w/flushing toilets, chemical toilets, recirculating toilets, or combustion toilets) including hand washing stations will be provided in accordance with 29 CFR 1926.65(n) and Table D-65.2.

H. RECORDKEEPING

The health- and safety-related documents for the project will be handled in the following manner:

H.1. Training and Safety Meeting Records

Certificates of completion for all mandatory training for Envirocon and lower tier subcontractor employees will be maintained on site at this site. Minutes for safety and health meetings, including daily safety briefings, will also be maintained on site. These records are located in Envirocon's Safety Trailer office.

H.2. Injury/Illness

Copies of "Supervisor's Report of Injury or Illness" will be maintained on site. Envirocon's official OSHA 200 log is maintained at the Corporate office. See the emergency procedures below for accident reporting procedures. A first aid log will be used to document first aid cases as described below in the log keeping section.

H.3. Accident Reports

Accident investigation reports will be maintained on site. All injuries will be reported to the client as well. See the emergency procedures below for accident reporting procedures.

H.4. Employee Exposure Data

Detailed exposure monitoring records will be made available to the employees monitored. General information, without personal information will be made available to all members of the crew on site. After the project is completed, these records will be archived for at least 40 years.

H.5. Medical Surveillance Records

All medical records received on site will be forwarded to the corporate office after review. No medical records will be maintained on site; Fitness For Duty forms, however, will be available on site for all personnel.

H.6. Written Programs

Written programs for compliance with the OSHA standards, such as respiratory protection, hearing conservation, and certain chemical exposure are maintained on the site as well as at the corporate office.

H.7. Health and Safety Plans

At least one copy of the plan and any amendments will be maintained on site.

H.8. Employee Access

All employees have a right to access most of the documents related to health and safety. Medical and training records are available only to individuals requesting their own records. Employees can receive copies of their medical records or air monitoring exposure records upon written request. Medical information can only be released upon the written consent of the individual.

H.9. Health and Safety and Related Logs

The health and safety officer is responsible for maintaining logs of health and safety activities, including safety inspections.

H.9.a. Health and Safety Log

This is a bound log of daily inspections and health and safety issues kept by the project health and safety officer.

H.9.b. First Aid Log

Employees are required to report all injuries and illness regardless of how minor the incident may seem. These reports shall be documented on an injury/illness report form, or in the project first aid log where diagnosis and treatments involve only simple first aid diagnosis and/or treatments.

Treatment/diagnosis by 3rd party EMTs, physicians, nurses, or other medical professionals shall be reported using the injury/illness reporting procedures. Determination of OSHA recordability/first-aid shall be determined by the Corporate Director of Health and Safety in these cases.

This First Aid Log is a log of all reported injuries and/or illnesses reported to supervisors and/or the health and safety officer. This log shall document the report, date, name of the injured employee, nature of the injury/illness, diagnosis and the treatment given.

If no treatment is given the incident shall still be noted in the log. This shall include any dispensing of first aid supplies or administered by a supervisor, safety officer or other first aid trained employee.

Non-work related injuries/illness reports and use of prescription drugs should also be noted in this log.

Self-medication by employees with respect to non-prescription (i.e., Over The Counter (OTC)) pharmaceuticals unrelated for colds headaches or other non-work related ailments need not be documented.

I. INCIDENT AND EMERGENCY PROCEDURES.

This section documents procedures to be followed in the event of incidents and certain emergencies. Where possible these have been formatted to individual sheets for response training and ready reference when needed.

I.1. General Emergency Procedures

This subsection describes procedures which are common to a variety of incidents.

I.1.a. Responsibilities

The site supervisor is responsible for the overall conduct of emergency procedures. This includes maintaining an orderly succession of supervision; making necessary reports to all concerned parties; ensuring that the causes of accidents are identified and corrected; and ensuring that injured personnel (with or without life threatening injuries) are escorted to medical treatment by the site safety officer or other supervisory personnel.

The HSO has the responsibility for ensuring that the provisions of this HASP are adequate and implemented in the field. Changing field conditions may require decisions to be made concerning adequate protection procedures. The HSO is also responsible for conducting site inspections on a regular basis to ensure the emergency readiness. The HSO shall be notified of any on-site emergencies and shall be responsible for ensuring that the appropriate procedures are followed.

I.1.b. First Aid

First Aid Kits are located in each Envirocon pickup, trailer, and decon facility.

A first aid trained individual will be on site at all times.

Emergency eye wash and showers will be located at the decon facility.

I.1.c. Evacuation Procedures

The site safety officer shall select and maintain appropriate assembly points for evacuations. The primary point of evacuation will be to the Envirocon personnel decontamination facility. At least one secondary assembly point shall be established by the safety officer and shall generically be an upwind point if fire or imminent release emergency would arise. General emergency directions include:

Turn off equipment whenever possible. Avoid leaving hazardous conditions in the process of evacuating.

Evacuate in the safest direction indicated by wind, smoke, fire, or other hazards.

Take a head count and report to the supervisor.

Do not leave the assembly area without reporting to the supervisor.

1.2. Reporting and Investigating Incidents

All incidents at the site shall be reported. It is hoped that most incidents will be small and/or near misses. It is essential that these events be reported as well more serious incidents in order to learn from them and avoid the more serious accidents.

1.2.a. Project and Facility Requirements

An incident is defined as follows:

- A work-related injury or illness

- An exposure to a hazardous substance above the allowable exposure limit

- Property/vehicle/equipment damage

- A uncontrolled fire or explosion

- An unplanned spill or release (including air releases) to the environment

- A permit exceedence

- Any unexpected contact or damage to aboveground or below ground utilities

A "near miss" or an unplanned event that has a reasonable probability in resulting in one of the outcomes described above had the circumstances been different and for which modifications to management programs will reduce the probability of occurrence or the severity of the outcome.

1.2.b. Reporting Incidents

Report all unplanned, unexpected, events or changes in conditions. Some examples include:

Personnel incidents such as:

- injuries,

- illnesses,

- first aid cases,

- fight or other acts or threats of violence,

- fatalities, or

- any personnel injuries or incidents which might be the result of acts of other contractors, subcontractors, or facility personnel.

Accidents such as:

- motor vehicle accidents (with or without damages),

- equipment accidents (with or without damages), or

- property damage (including fires).

New, previously unknown, or unexpected potential hazards such as:

- buried drums, cylinders, or hazardous materials containers,

unusual soil conditions (e.g., previously disturbed soils, soils with unusual odors, soils with unusual coloration),

floating contaminants (e.g., oil, chemicals, or sheens on water).

Environmental incidents such as:

oil or chemical spills,

Unauthorized personnel in work areas such as:

unauthorized workers on site,

unescorted public visitors,

media personnel, or

unescorted government visitors.

1.2.c. Procedures for Reporting Incidents

First Responder's Report

If your work is involved with the incident of interest, **STOP WORK IMMEDIATELY!**

Ensure the safety of the area from any imminent hazards.

Report to your immediate supervisor by radio or phone if at all possible.

If you must leave the area to make a report, find someone to help secure the area if at all possible.

Supervisors

Control imminent hazards as necessary.

Ensure that injuries are being taken care of, and assign someone to escort injured employees leaving the site for medical evaluation/treatment.

Ensure that the area is adequately secured.

Ensure that the scene is not further disturbed.

Visit the accident scene as soon as possible.

Interview injured workers and witnesses as soon as possible.

Reporting requirements

Report all incidents verbally to the client as soon as the area has been secured.

Follow up with a written report before the close of business.

Follow up with a written investigation report within 48 hours.

1.3. Personnel Injury

1.3.a. First Aid

The PM (or senior supervisor on site) and/or HSO shall ensure necessary first aid or medical attention is obtained. First aid shall be provided by qualified first aid providers or EMTs.

If personnel need medical evaluation, ensure that a safety officer or supervisor is assigned to escort the employee.

Do not allow injured personnel to drive themselves unless a doctor determines they are fit to do so.

If a doctor prescribes medication determine if that medication limits ability to drive. Do not allow employees to drive themselves if the medication impacts on driving safety. (If an employee wants to drive themselves and has been prescribed medication that will impact on driving safety the employee can wait to take the medicine at home if the doctor allows this.)

1.3.b. Hazard Assessment

The PM (or senior supervisor on site) and/or HSO shall immediately investigate the nature and cause of injury in order to assess the hazard to ongoing site work. This should include consideration of working short handed if the injured person can not resume work right away. It is the senior supervisor's responsibility to stop work if necessary to make corrective changes.

1.4. Heavy Weather

1.4.a. High Winds

Outdoor equipment operations for non-intrusive activities will be suspended at wind speeds of 35 mph for 15-minutes, any gust of 55 mph or when dust control measures are no longer effective. Soil intrusive activities including excavation, truck loading or unloading, crane operations, work with sheet materials (e.g., liners); or work with large profile materials will be stopped at 25 mph.

1.4.b. Lightning.

Outdoor operations will be suspended when lightning is within a 5 second count of the site (i.e., the time difference between seeing a lightning strike and hearing the sound). High profile equipment operations shall be suspended when lightning is within 15 seconds of the site. Safety officer may halt activities for lightning up to a 25-seconds away if fast approaching storms or multiple severe strikes are in evidence.

High profile operations include crane operations, drilling operations, or electrical wiring tasks.

Equipment operators shall stop their equipment and park it safely before heading for shelter.

No personnel will be left on the ground in an exposed location.

Preferred shelter is a permanent building. Personnel may also take shelter in trailers or low profile rubber tired equipment (e.g., pickups). Avoid driving pickups or any other equipment except to help evacuate personnel.

Work will resume after a 15-minute period without lightning.

1.4.c. Phone Threats

This includes bomb threats, threats against personnel, threats of violence or any other threatening communications made by phone or radio.

Do not hang up.

- Try to remain calm. It is important not to hang up on threatening callers. This may provoke an act of violence.

Listen carefully to background noises or conversations.

Take notes on the callers exact words if possible.

Try to get someone else to report the call immediately to the phone company on another line before the caller hangs up.

Report the call immediately to the senior Envirocon supervisor on site.

DO NOT discuss the call with anyone else.

The Envirocon supervisor shall immediately bring the call to the attention of the senior client's representative.

The senior supervisors from Envirocon and the client's project manager shall be responsible for determining if an evacuation will be called.

I.4.d. Rescue

Notify someone.

Put into effect the established emergency rescue procedures.

Know the locations of the emergency rescue equipment before the need arises.

1.5. Emergency Contacts for Site*

Position/Agency	Person/Radio	Phone
Fire Department		Emergency 911
Ambulance		Emergency 911
Police		Emergency 911
Envirocon Project Manager	Jeff Mikell	(801) 554-2461
Envirocon Project Superintendent	Brian Vibbert	(406) 546-9551
Health and Safety Supervisor	Doug Tisdell	(406) 544-6883
Envirocon Corp. Dir Health & Safety	Joe Ocken	(406)-523-1194
Envirocon Corp Ofc. Missoula, MT		(406) 523-1150
ENVIROCON SAFETY HOTLINE:		800-224-7389
Libby Police Department 203 Mineral Ave. Libby, MT 59923		(406)-293-3343
Lincoln County Sheriff Department		(406)-293-7781
St. Johns Lutheran Hospital 350 Louisiana Avenue Libby, MT 59923		(406)-293-0100
Agency for Toxic Substances and Disease Registry (ATSDR) chemical exposures		(404)-639-0615 (emergency) (404)-639-6360 / 6000 (non- emergency)

Appendix A: Voluntary Employee's Emergency Information Data Sheet

Last name _____ First Name _____

The following information is being gathered to help us respond to an emergency. **All questions are optional.** You may answer any of the questions you like or leave any blank. The original copy is sent to the Corporate safety office, and a copy will be maintained on site. If the information provided changes, you should submit a new sheet.

Emergency Contacts (name as many as you like)

In the event of an emergency who should we contact to let them know? _____

What City and State do they live in? _____ phone number? _____

What is their relationship to you? _____

Emergency Contact for YOU !

How can we get in touch with you for project recalls, shutdowns, emergencies etc.? _____

Where are you staying while on site? _____

What is the phone number there? _____

Medical Conditions

Are you allergic to any medications? ☐yes/☐no.

What are they? _____

Are you allergic to insect bites or stings? ☐yes/☐no.

What are they? _____

Do you carry treatments or medicine(s) (e.g., insulin, sugar/candy/food, bee sting kits) that needs to be given in an emergency? ☐yes/☐no.

What are they? _____

Where is it kept? _____

Are you or do you have:

- ☐yes/☐no: Hypertension (Is it uncontrolled? ☐yes/☐no)
- ☐yes/☐no: Asthma (Is it uncontrolled? ☐yes/☐no)
- ☐yes/☐no: Diabetes (Is it uncontrolled? ☐yes/☐no)
- ☐yes/☐no: Hypoglycemia
- ☐yes/☐no: Epilepsy/seizures
- ☐yes/☐no: Fainting spells
- ☐yes/☐no: Irregular heart beat
- ☐yes/☐no: Narcolepsi (sleeping spells)

Safety Officer's Notes:

Shop Drawing Review Letter

Kennedy/Jenks Consultants

32001 32nd Avenue South, Suite 100
Federal Way, WA 98001-9625
253-874-0555
253-952-3435 (Fax)
www.KennedyJenks.com

To: Envirocon
4381 Highway 2 West
PO Box 649
Libby, MT

DATE: 10 September 2004
SERIAL NO.: 002
SPEC. REF.: 01300
PROJECT: BNSF Libby Yard Response
Action 2004

K/J JOB NO.: 046022.11
SUBMITTAL NO.: 01300-2
PAGE: 1 of 1

ATTENTION: Jeff Mikkell

A. The action(s) noted below have been taken on the enclosed drawing(s).

NET = No Exceptions Taken
MCN = Make Corrections Noted

A&R = Amend and Resubmit
RR = Rejected, Resubmit

NR = Not Reviewed

Item	K/J Action	Refer to Comment	Manufacturer or Supplier	Title of Submittal / Drawing
002	NET	No	Not Applicable	Schedule

Comment: None

Discussion: None

- B. Corrections or comments made on the shop drawings during this review do not relieve the contractor from compliance with the requirements of the drawings and specifications. This check is only for review of general conformance with the design concept of the project and general compliance with the information given in the contract documents. The contractor is responsible for: confirming and correlating all quantities and dimensions, selecting fabrication processes and techniques of construction, coordinating its work with that of all other trades, and performing its work in a safe and satisfactory manner.**

DISTRIBUTION		SDRL	ENCL.
Envirocon	Jeff Mikkell	x	x
Project Coordinator:	Dick Gugliomo	x	x
Construction Manager	Dave Diem	x	x
Resident Engineer:	Brent Sowle	x	x
File		x	x

By: _____



Chuck Soule

ENVIROCON

4381 Highway 2 West
PO Box 649
Libby, MT 59923
TEL (406) 293-8659
FAX (406) 293-45145

SUBMITTAL/ TRANSMITTAL

Date: 9/1/04	Submittal #: 002
Project: BNSF Libby Rail Yard Response Action - 2004 Project No. 14560	Revision #:
To: Kennedy/Jenks Consultants 32001 32 nd Avenue South, Suite 100 Federal Way, Washington 98001 ATTN: Charles Soule	Specification 01300 Section/Drawing No. Subject:

We are sending via: ☒ Hand Delivery ☐ Mail ☐ Federal Express ☐ UPS
 ☐ Enclosed ☐ Separately

SECTION NO.	SPECIFICATION NAME	DESCRIPTION OF SUBMITTAL	COMMENTS
01300	Submittals	Preliminary schedule	3 copies

Envirocon Representative

DM NJM

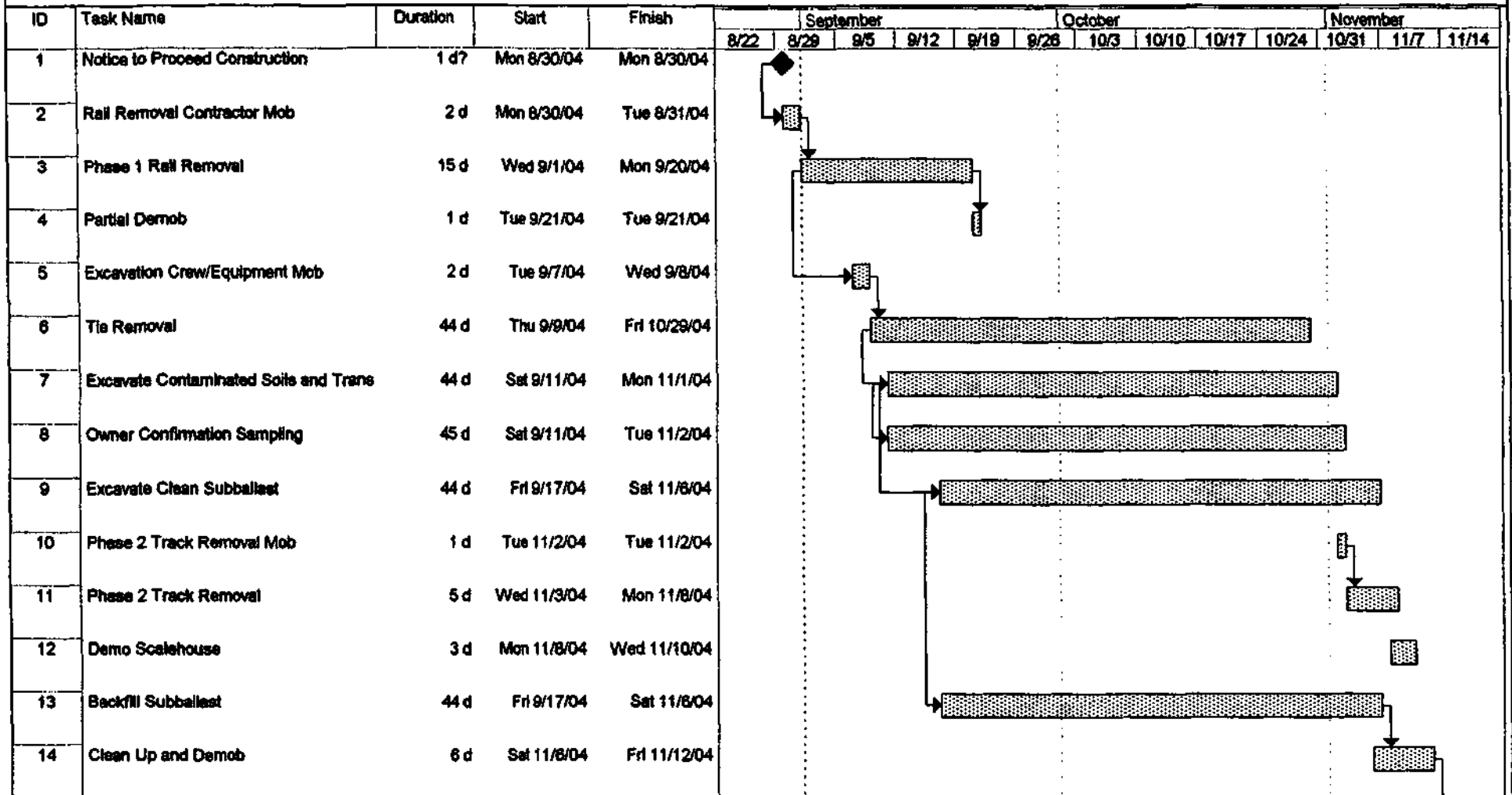
SHOP DRAWING REVIEW	
S.D. 002 No. 01300-2	
ACTION	
Subject to all provisions of Project Plans and Specifications	
<input checked="" type="checkbox"/> NO EXCEPTIONS TAKEN	<input type="checkbox"/> AMEND & RESUBMIT
<input type="checkbox"/> MAKE CORRECTIONS NOTED NO RESUBMISSION REQUIRED	<input type="checkbox"/> REJECTED RESUBMIT
Kennedy/Jenks Consultants	
By <i>CS</i>	Date 9/9/04

K/J Federal Way

Title Project Manager

Action Taken	
<input type="checkbox"/> Approved As Submitted
<input type="checkbox"/> Approved As Noted (see notes/exceptions)
<input type="checkbox"/> Rejected (re-submittal required)
By _____ Date _____	
Engineer	

BN/SF Libby Rail Yard Removal Action



Project: Project2
Date: Wed 9/1/04

Task		Rolled Up Task		External Tasks	
Critical Task		Rolled Up Critical Task		Project Summary	
Progress		Rolled Up Milestone		Group By Summary	
Milestone		Rolled Up Progress		Deadline	
Summary		Split			

BN/SF Libby Rail Yard Removal Action

ID	Task Name	Duration	Start	Finish	September					October				November			
					8/22	8/29	9/5	9/12	9/19	9/26	10/3	10/10	10/17	10/24	10/31	11/7	11/14
15	Project Complete	1 d	Fri 11/12/04	Fri 11/12/04													



Project: Project2 Date: Wed 9/1/04	Task		Rolled Up Task		External Tasks	
	Critical Task		Rolled Up Critical Task		Project Summary	
	Progress		Rolled Up Milestone		Group By Summary	
	Milestone		Rolled Up Progress		Deadline	
	Summary		Split			

Submittal No. 3 (Schedule of Values) was rejected. It was resubmitted as Submittal No. 7, which was accepted.

Shop Drawing Review Letter

Kennedy/Jenks Consultants

32001 32nd Avenue South, Suite 100
Federal Way, WA 98001-9625
253-874-0555
253-952-3435 (Fax)
www.KennedyJenks.com

To: Envirocon
4381 Highway 2 West
PO Box 649
Libby, MT

DATE: 10 September 2004
SERIAL NO.: 004
SPEC. REF.: 01300
PROJECT: BNSF Libby Yard Response
Action 2004
K/J JOB NO.: 046022.11
SUBMITTAL NO.: 01300-4
PAGE: 1 of 1

ATTENTION: Jeff Mikkell

A. The action(s) noted below have been taken on the enclosed drawing(s).

NET = No Exceptions Taken
MCN = Make Corrections Noted

A&R = Amend and Resubmit
RR = Rejected, Resubmit

NR = Not Reviewed

Item	K/J Action	Refer to Comment	Manufacturer or Supplier	Title of Submittal / Drawing
004	NET	No	Not Applicable	Superintendent Resume

Comment: None

Discussion: None

B. Corrections or comments made on the shop drawings during this review do not relieve the contractor from compliance with the requirements of the drawings and specifications. This check is only for review of general conformance with the design concept of the project and general compliance with the information given in the contract documents. The contractor is responsible for: confirming and correlating all quantities and dimensions, selecting fabrication processes and techniques of construction, coordinating its work with that of all other trades, and performing its work in a safe and satisfactory manner.

DISTRIBUTION		SDRL	ENCL.
Envirocon	Jeff Mikkell	x	x
Project Coordinator:	Dick Guglomo	x	x
Construction Manager	Dave Diem	x	x
Resident Engineer:	Brent Sowle	x	x
File		x	x

By: _____


Chuck Soule

ENVIROCON

4381 Highway 2 West
PO Box 649
Libby, MT 59923
TEL (406) 293-8659
FAX (406) 293-45145

SUBMITTAL/ TRANSMITTAL

Date: 9/1/04	Submittal #: 004
Project: BNSF Libby Rail Yard Response Action - 2004 Project No. 14560	Revision #:
To: Kennedy/Jenks Consultants 32001 32 nd Avenue South, Suite 100 Federal Way, Washington 98001 ATTN: Charles Soule	Specification Section/Drawing No. 01300
	Subject

We are sending via: ☒ Hand Delivery ☐ Mail ☐ Federal Express ☐ UPS
 ☐ Enclosed ☐ Separately

SECTION NO.	SPECIFICATION NAME	DESCRIPTION OF SUBMITTAL	COMMENTS
01300	Submittals	Designation of Superintendent	3 copies

Envirocon Representative

SHOP DRAWING REVIEW
S.D. 004 No. 01300-4
ACTION
Subject to all provisions of Project Plans and Specifications

<input checked="" type="checkbox"/> NO EXCEPTIONS TAKEN	<input type="checkbox"/> AMEND & RESUBMIT
<input type="checkbox"/> MAKE CORRECTIONS NOTED NO RESUBMISSION REQUIRED	<input type="checkbox"/> REJECTED RESUBMIT

RECEIVED
Kennedy/Jenks Consultants
By Charles Soule Date 9/9/04
K/J Federal Way

Title Project Manager

Action Taken

- ☐ Approved As Submitted
- ☐ Approved As Noted (see notes/exceptions)
- ☐ Rejected (re-submittal required)

By _____ Date _____
Engineer

BRIAN VIBBERT

TITLE Safety Supervisor/Construction Superintendent

EXPERIENCE

Mr. Vibbert has 12 years experience in construction management in a safety supervisory role, superintendent role, or combination of each. His primary experience is Occupational Health and Safety managing large construction projects and specializing in industrial hygiene, compliance research, Activity Hazard Analysis (AHA) development, and written program and procedure development for occupational hazards in general industry and construction. His experience also includes dual role positions as safety supervisor and superintendent, or solely superintendent roles on several major construction sites.

His selected project experience includes:

- Construction superintendent for the demolition of a coke plant in Kemmerer, Wyoming. Scope included hazardous materials abatement and demolition services. This included a hazardous materials survey, removal, and proper disposal of all hazardous/toxic materials (asbestos, mercury switches, light fixtures/bulbs, cleaning supplies, waste oil, lubricants, etc.) remaining on site; removal and proper disposal of all process equipment, structures, and buildings to grade level; removal and disposal of all above ground utilities including 5 miles of overhead power lines and poles; sump closures; and the excavation and management of on-site disposal cells for non-salvageable debris.
- Site Safety Supervisor and construction superintendent for a conversion of 72 miles of railroad into a recreation bicycle and hiking trail in Northern Idaho. The project included the removal and salvage of 64 miles of rail and ties, excavation and transportation to a repository of 110,000 cubic yards of contaminated rail bed material, installation of 59 culverts, erosion repair, riprap construction, precast concrete bridge construction, and backfill of 78,000 cubic yards of structural fill. This included decontaminating over 180,000 railroad ties. The rail bed was ripped, compacted, and reconstructed using over 120,000 cubic yards of crushed gravel. A 53 mile length of trail was paved with asphalt, with the remaining 19 miles being completed with crushed gravel. The work involved coordination with numerous agencies including EPA, Corps of Engineers, Idaho DEQ, Idaho Department of Parks and Recreation, IDOT, the Coeur d'Alene Indian tribe, and three county governments.
- Site foreman for the residential portion of reclamation work at the Triumph Mine Site in Triumph, Idaho. The project involved the regrading and capping two tailings piles, regrading and capping an approximately 400,000 cubic yard waste rock pile, construction of a geosynthetic-lined pond within the waste rock pile to store mine discharge water, and a 30 property residential yard removal.
- Site Safety Supervisor and QA/QC for the grading and stabilization of Class IV residue at a former zinc refinery site in Bartlesville, Oklahoma. The refinery produced various metals from the refining of zinc concentrates, secondary materials, and other zinc rich materials. The scope of work included the excavation, hauling, stabilization, and placement of three types of on-site materials, 68,800 cubic yards of goethite, 39,800 cubic yards of hot tower precipitate (HTP), and 23,000 cubic yards of contaminated pond sediments. The contaminants of concern for the above materials were lead, arsenic, cadmium, and zinc.
- Site Safety Supervisor on multi-year project overseeing employees and subcontractors performing remediation work on a remote copper and cobalt mine. Work consisted of heavy equipment operations removing over 400,000 cubic yards of mine tailings; construction of diversion ditches, pipe installation, two clay-core dams (100' and 160' high) with grout curtains, elaborate drain system through capped tailings, sediment containment ponds, roads and 4500' of concrete creek channels. Duties consisted of: site security, air monitoring, site specific and HAZWOPER training, daily safety meetings, first aid provider on secluded job sites; maintaining all compliance documentation; accident investigations, and traffic control for all main and haul roads.

BRIAN VIBBERT (Cont.)

- Site Safety Officer/foreman on a demolition project overseeing asbestos removal operations. Duties consisted of daily industrial hygiene surveys for asbestos, employee training, site monitoring, and fit testing respirators.
- Site Safety Officer on a Superfund site overseeing safety and industrial hygiene for the stabilization and removal of 2,500 drums of contaminated waste, 1600' slurry wall installation, and the excavation and remediation of contaminated sludge and wood waste. Duties consisted of: site security, daily air monitoring, performing daily safety meetings, maintaining all compliance documentation, work plan writing and development, purchasing and maintaining all levels of personal protective and safety equipment, fit testing respirators, traffic control, and first aid.
- Site Safety Officer for a major construction company overseeing 80+ union ironworkers for the demolition and renovation of an elevated railroad. Work consisted of removing designated track structure, demolition of elevated concrete track foundation, replacement of foundation, track, and ties. Primary regulations included Lead exposure and fall protection. Duties consisted of employee training; maintaining all compliance documentation; administering and tracking medical and Lead monitoring program; fit testing respirators, site and traffic monitoring, on-site inspections, air monitoring for employees, and first aid training.
- Safety Consultant responsible for writing and implementation of Corporate Safety and Health programs. Program implementation and training material included hazard communication, confined space entry procedures, electrical safety programs, bloodborne pathogen programs, record keeping program analysis, respirator protection programs, lockout/tagout programs and procedures, and emergency action and fire exit plans.
- Emergency Medical Technician with a volunteer ambulance service responsible for training all volunteers in hazard communication, and bloodborne pathogens. This included fit testing HEPA respirators, accounting for all protective equipment, maintaining all safety compliance documentation, and overseeing safety on all vehicle accidents, rescues, and fires.

EDUCATION

B.S., Occupational Safety and Industrial Hygiene, Millersville University

TRAINING/CERTIFICATIONS

40-Hour Hazardous Waste Operations Training
32-Hour Asbestos Worker
8-Hour Hazardous Waste Operations Supervisors' Training
30-Hour Construction Safety
National Registered Emergency Medical Technician
Radiation Worker Level II Training

Address

Libby Home Address- Two Bit Trailer Park, Highway 2 West
Cell Phone- 406-546-9551

Submittal No. 5 (Type 2 Subballast gradation) was rejected. It was resubmitted as Submittal No. 6, which was accepted.

Shop Drawing Review Letter

Kennedy/Jenks Consultants

32001 32nd Avenue South, Suite 100
Federal Way, WA 98001-9625
253-874-0555
253-952-3435 (Fax)
www.KennedyJenks.com

To: Envirocon
4381 Highway 2 West
PO Box 649
Libby, MT 59923

DATE: 22 September 2004
SERIAL NO.: 006
SPEC. REF.: 02302.1.03
PROJECT: BNSF Libby Yard Response
Action 2004
K/J JOB No.: 046022.11
SUBMITTAL No.: 02302-2
PAGE: 1 of 1

ATTENTION: Jeff Mikkel

A. The action(s) noted below have been taken on the enclosed drawing(s).

NET = No Exceptions Taken
MCN = Make Corrections Noted

A&R = Amend and Resubmit
RR = Rejected, Resubmit

NR = Not Reviewed


Item	K/J Action	Refer to Comment	Manufacturer or Supplier	Title of Submittal / Drawing
006	NET	No	Remp Sand and Gravel	Type 2 subballast gradation

Comment: None

Discussion: None

- B. Corrections or comments made on the shop drawings during this review do not relieve the contractor from compliance with the requirements of the drawings and specifications. This check is only for review of general conformance with the design concept of the project and general compliance with the information given in the contract documents. The contractor is responsible for: confirming and correlating all quantities and dimensions, selecting fabrication processes and techniques of construction, coordinating its work with that of all other trades, and performing its work in a safe and satisfactory manner.**

DISTRIBUTION		SDRL	ENCL.
Envirocon	Jeff Mikkel	x	x
Project Coordinator:	Dick Guglomo	x	x
Construction Manager	Dave Diem	x	x
Resident Engineer:	Brent Soule	x	x
File		x	x

By: 
Chuck Soule

ENVIROCON

4381 Highway 2 West
PO Box 649
Libby, MT 59923
TEL (406) 293-8659
FAX (406) 293-45145

RECEIVED
SEP 21 2004
K/J Federal Way

SUBMITTAL/ TRANSMITTAL

Date: 9/1/04	Submittal #: 006
Project: BNSF Libby Rail Yard Response Action - 2004 Project No. 14560	Revision #: 1
To: Kennedy/Jenks Consultants 32001 32 nd Avenue South, Suite 100 Federal Way, Washington 98001 ATTN: Charles Soule	Specification Section/Drawing No. 02302.1.03. Subject:

We are sending via: ☒ Hand Delivery ☐ Mail ☐ Federal Express ☐ UPS
 ☐ Enclosed ☐ Separately

SECTION NO.	SPECIFICATION NAME	DESCRIPTION OF SUBMITTAL	COMMENTS
01300	Earthwork	Type 2 subballast gradation	Remp Sand & Gravel - 8 copies

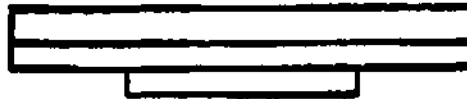
Envirocon Representative JM

Title Project Manager

SHOP DRAWING REVIEW	
S.D. 006 No. 02302-2	
ACTION	
Subject to all provisions of Project Plans and Specifications	
<input checked="" type="checkbox"/> NO EXCEPTIONS TAKEN	<input type="checkbox"/> AMEND & RESUBMIT
<input type="checkbox"/> MAKE CORRECTIONS NOTED NO RESUBMISSION REQUIRED	<input type="checkbox"/> REJECTED RESUBMIT
Kennedy/Jenks Consultants	
By <u>CS</u>	Date 9/22/04

Action Taken	
<input type="checkbox"/>	Approved As Submitted
<input type="checkbox"/>	Approved As Noted (see notes/exceptions)
<input type="checkbox"/>	Rejected (re-submittal required)
By _____	Date _____
Engineer	

GRADATION SIEVE ANALYSIS



JOB # REMP SAND & GRAVEL
TESTING REQUIRED ON SAMPLE T11 & T27

PROJECT: 3M" CRUSHED

DATE: 9.18.04

INSPECTOR: DAK

SAMPLE GROSS WT., WET (gm) 7050.0
SAMPLE GROSS WT., DRY (gm) 7050.0
CONTAINER TARE WEIGHT (gm) 658.0
NET WEIGHT SAMPLE (gm) 6392.0

SAMPLE % MOISTURE 0.0

% SAMPLE PASSING #200 16.4

sieve size	1"	3/4"	1/2"	3/8"	1/4"	#4	#6	#10
weight retained	0.0	0.0	0.0	1708.0	0.0	1282.0	0.0	0.0
percent retained	0.0	0.0	0.0	26.7	0.0	20.1	0.0	0.0
percent passing	100.0	100.0	100.0	73.3	73.3	63.2	63.2	63.2
specification	N/A							

sieve size	#18	#30	#40	#50	#60	#80	#100	#200
weight retained	1561.0	0.0	0.0	0.0	0.0	0.0	1170.0	200.0
percent retained	21.3	0.0	0	0	0	0	18.4	3.1
percent passing	31.8	31.8	31.8	31.8	31.8	31.8	13.6	10.4
specification	N/A							

Shop Drawing Review Letter

Kennedy/Jenks Consultants

32001 32nd Avenue South, Suite 100
Federal Way, WA 98001-9625
253-874-0555
253-952-3435 (Fax)
www.KennedyJenks.com

To: Envirocon
4381 Highway 2 West
PO Box 649
Libby, MT

DATE: 29 September 2004
SERIAL NO.: 007
SPEC. REF.: 02302.1.03
PROJECT: BNSF Libby Yard Response
Action 2004
K/J JOB No.: 046022.11
SUBMITTAL No.: 01300-5
PAGE: 1 of 1

ATTENTION: Jeff Mikkell

A. The action(s) noted below have been taken on the enclosed drawing(s).

NET = No Exceptions Taken
MCN = Make Corrections Noted

A&R = Amend and Resubmit
RR = Rejected, Resubmit

NR = Not Reviewed

Item	K/J Action	Refer to Comment	Manufacturer or Supplier	Title of Submittal / Drawing
007	NET	No	Not Applicable	Envirocon Schedule of Values

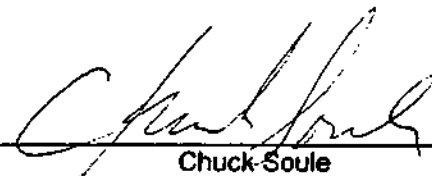
Comment: None

Discussion: None

B. Corrections or comments made on the shop drawings during this review do not relieve the contractor from compliance with the requirements of the drawings and specifications. This check is only for review of general conformance with the design concept of the project and general compliance with the information given in the contract documents. The contractor is responsible for: confirming and correlating all quantities and dimensions, selecting fabrication processes and techniques of construction, coordinating its work with that of all other trades, and performing its work in a safe and satisfactory manner.

DISTRIBUTION		SDRL	ENCL
Envirocon	Jeff Mikkell	x	x
Project Coordinator:	Dick Guglielmo	x	x
Construction Manager	Dave Diem	x	x
Resident Engineer:	Brent Sowle	x	x
File		x	x

By:


Chuck Soule

ENVIROCON

4381 Highway 2 West
PO Box 649
Libby, MT 59923
TEL (406) 293-2727
FAX (406) 293-2729

RECEIVED
SEP 21 2004
K/J Federal Way

SUBMITTAL/ TRANSMITTAL

Date: 9/20/04	Submittal #: 007
Project: BNSF Libby Rail Yard Response Action - 2004 Project No. 14560	Revision #: 1
To: Kennedy/Jenks Consultants 32001 32 nd Avenue South, Suite 100 Federal Way, Washington 98001 ATTN: Charles Soule	Specification 01300 Section/Drawing No. Subject

We are sending via: ☒ Hand Delivery ☐ Mail ☐ Federal Express ☐ UPS
 ☐ Enclosed ☐ Separately

SECTION NO.	SPECIFICATION NAME	DESCRIPTION OF SUBMITTAL	COMMENTS
01300	Submittals	Schedule of Values	3 copies

Envirocon Representative *[Signature]*

Title Project Manager

SHOP DRAWING REVIEW	
S.D. 007 No. <u>01300-5</u>	
ACTION	
Subject to all provisions of Project Plans and Specifications	
<input checked="" type="checkbox"/> NO EXCEPTIONS TAKEN	<input type="checkbox"/> AMEND & RESUBMIT
<input type="checkbox"/> MAKE CORRECTIONS NOTED NO RESUBMISSION REQUIRED	<input type="checkbox"/> REJECTED RESUBMIT
Kennedy/Jenks Consultants	
By <u><i>[Signature]</i></u>	Date <u>9/29/04</u>

Action Taken	
<input type="checkbox"/> Approved As Submitted
<input type="checkbox"/> Approved As Noted (see notes/exceptions)
<input type="checkbox"/> Rejected (re-submittal required)
By _____ Date _____	
Engineer	

ENVIROCON, INC
SCHEDULE OF VALUES
BNSF LIBBY RAIL YARD RESPONSE ACTION - 2004

BURLINGTON NORTHERN & SANTA FE RAILWAY COMPANY
ATTN: DAVE SMITH
139 NORTH LAST CHANCE GULCH
HELENA, MT 59601

INVOICE #:
DATE:
INVOICED THROUGH:

SOV ITEM #	DESCRIPTION OF WORK	CONTRACT AMOUNT	CONTRACT UNIT PRICE	CONTRACT UNITS	UNIT	UNITS COMPLETED			THIS INVOICE	TOTAL COMPLETED			BALANCE TO COMPLETE
						THIS INVOICE	PRIOR PERIOD	TO DATE		PRIOR PERIODS	TO DATE	%	
A1.1	MOBILIZATION & DEMOBILIZATION	\$25,300.00	\$25,300.00	1	LS								\$25,300.00
A1.2	HAZWOPPER TRAINING	\$1.00	\$1.00	1	LS								\$1.00
A2	HEALTH AND SAFETY	\$13,500.00	\$13,500.00	1	LS								\$13,500.00
A3	TRACK REMOVAL	-\$1,540.00	-\$0.11	14,000	SF								-\$1,540.00
A6	ORANGE BARRIER FENCE INSTALLED	\$6,390.00	\$1.42	4,500	LF								\$6,390.00
A7	CONNECTION TO EXISTING FIRE HYDRANT	\$1,705.00	\$1,705.00	1	LS								\$1,705.00
A8	PPE SIGN	\$170.00	\$170.00	1	EA								\$170.00
A9	RESET TREADS DECON PAD	\$2,272.00	\$2,272.00	1	LS								\$2,272.00
B1	MOBILIZATION & DEMOBILIZATION & INSURANCE	\$88,600.00	\$88,600.00	1	LS								\$88,600.00
B2	HEALTH AND SAFETY	\$76,650.00	\$76,650.00	1	LS								\$76,650.00
B3	DECON PAD CONSTRUCTION & DEMO	\$15,880.00	\$15,880.00	1	LS								\$15,880.00
B4	PLACE GEOTEXTILE FABRIC	\$9,450.00	\$0.03	315,000	SF								\$9,450.00
B5	REMOVE TIES WITHOUT WASHING AND LOAD	\$62,550.00	\$6.95	9,000	EA								\$62,550.00
B6	REMOVE TIES, WASH AND STORE	\$70,650.00	\$7.85	9,000	EA								\$70,650.00
B7	EXCAVATE & DISPOSE OF CONTAMINATED SOIL	\$169,400.00	\$12.10	14,000	TONS								\$169,400.00
B7A	EXCAVATE & DISPOSE OF CLEAN SOIL	\$95,400.00	\$5.30	18,000	TONS								\$95,400.00
B8	PLACE CLEAN IMPROT SUBBALLAST	\$48,000.00	\$3.20	15,000	TONS								\$48,000.00
B9A	ORANGE BARRIER FENCE INSTALLED	\$3,040.00	\$1.90	1,600	LF								\$3,040.00
B9B	REMOVE ORANGE SAFETY FENCE	\$2,196.00	\$0.36	6,100	LF								\$2,196.00
B10	DEMOLISH TRACK SCALE AND HOUSE	\$14,500.00	\$14,500.00	1	LS								\$14,500.00
B11	DISPOSE OF CONTRACTOR SUPPLIED ITEMS AND PPE	\$620.00	\$620.00	1	LS								\$620.00
B12	OVERFLOW PIT AT THE DECONTAMINATION PAD	\$1,856.00	\$1,856.00	1	LS								\$1,856.00
D1	HYDROSEEDING	\$1,500.00	\$0.06	25,000	SF								\$1,500.00
D2	DEDUCT FOR AWARD SCHEDULE A AND B	-\$50.00	-\$50.00	1	LS								-\$50.00
D3	REMOVE CLEAN SUITABLE SUBGRADE SOIL TO LCL	\$5.30	\$5.30	1	TONS								\$5.30
D5	SILTATION FENCE	\$3.41	\$3.41	1	LF								\$3.41
TOTAL		\$708,048.71											\$708,048.71

Engineer Approval

Date

Appendix F

Documentation of Material Taken to Asbestos Cell at Lincoln County Landfill

TABLE F-1

**Summary of Soil Hauled to Asbestos Cell
Lincoln County Landfill
BNSF Libby Yard Response Action 2004**

Week	Weekly Tons	Weekly Cu. Yards
9/6/2004	NA	4.00
9/13/2004	1,018.38	636.49
9/20/2004	2,833.79	1,771.12
9/27/2004	3,032.74	1,895.46
10/4/2004	675.49	422.18
10/11/2004	3,594.03	2,246.27
10/18/2004	1,704.95	1,065.59
Total	12,859.38	8,041.11

TABLE F-2

**Soil Hauled to Asbestos Cell at Lincoln County Landfill
BNSF Libby Yard Response Action 2004
Weeks of 6 September and 13 September 2004**

Soil Haul Information						
Date	Ticket #	Tare	Gross	Net	Tons	CY
9/9/2004	NA	NA	NA	NA	Estimate	4.00
Week of 6 September - 1 half load, as test					NA	4.00

Soil Haul Information						
Date	Ticket #	Tare	Gross	Net	Tons	CY
9/15/2004	1008	27080	42540	15460	7.73	4.83
9/15/2004	1007	27080	47520	20440	10.22	6.39
9/15/2004	1010	24020	43480	19460	9.72	6.08
9/15/2004	1011	22680	45860	22980	11.49	7.18
9/15/2004	1013	28960	48360	21400	10.7	6.69
9/15/2004	1014	24020	45440	21420	10.71	6.69
9/15/2004	1015	22640	41840	19200	9.8	6.00
9/15/2004	1016	24020	44960	20940	10.47	6.54
9/15/2004	1018	22840	43860	21220	10.61	6.63
9/15/2004	1019	26960	48240	21280	10.84	6.65
9/15/2004	1020	24020	45180	21160	10.58	6.61
9/15/2004	1021	22640	44080	21420	10.71	6.69
9/15/2004	1023	26960	48720	21760	10.88	6.80
9/15/2004	1024	24020	45440	21420	10.71	6.69
9/15/2004	1025	22840	42280	19640	9.82	6.14
9/15/2004	1026	26720	48560	21840	10.92	6.83
9/15/2004	1027	24020	45340	21320	10.66	6.66
9/15/2004	1029	22840	50560	27920	13.95	8.73
9/15/2004	1030	26720	49400	22680	11.34	7.09
9/15/2004	1031	24020	46560	22540	11.27	7.04
9/15/2004	1032	22840	44400	21760	10.88	6.80
9/15/2004	1033	26720	48000	21280	10.64	6.65
9/15/2004	1034	24020	44800	20780	10.39	6.49
9/15/2004	1036	22840	46040	23400	11.7	7.31
9/15/2004	1037	26720	49220	22500	11.25	7.03
9/15/2004	1038	24020	44660	20640	10.32	6.45
9/15/2004	1039	22840	44240	21600	10.8	6.75
9/15/2004	1040	26720	48280	22560	11.28	7.05

Total = 686620 1286820 600000 300 187.50

Soil Haul Information						
Date	Ticket #	Tare	Gross	Net	Tons	CY
9/16/2004	1041	22640	44020	21380	10.69	6.68
9/16/2004	1043	24020	43900	19880	9.84	6.21
9/16/2004	1044	25440	40620	15180	7.59	4.74
9/16/2004	1045	22640	46440	23800	11.9	7.44
9/16/2004	1046	24020	44880	20860	10.43	6.52
9/16/2004	1047	25440	40540	15100	7.55	4.72
9/16/2004	1049	22640	44080	21440	10.72	6.70
9/16/2004	1050	24020	49100	25080	12.54	7.84
9/16/2004	1051	25440	40860	15420	7.71	4.82
9/16/2004	1052	22640	45180	22540	11.27	7.04
9/16/2004	1053	24020	47200	23180	11.59	7.24
9/16/2004	1054	25440	40920	15480	7.74	4.84
9/16/2004	1055	22640	46280	23640	11.82	7.39
9/16/2004	1056	24020	49460	25440	12.72	7.95
9/16/2004	1057	25440	41280	15840	7.92	4.85
9/16/2004	1058	22640	47860	25220	12.61	7.88
9/16/2004	1059	24020	47400	23380	11.69	7.31
9/16/2004	1060	25440	40320	14880	7.44	4.65
9/16/2004	1061	22640	45200	22560	11.28	7.05
9/16/2004	1062	24020	46720	22700	11.35	7.09
9/16/2004	1063	25440	40900	15460	7.73	4.83
9/16/2004	1064	22640	45580	22940	11.47	7.17
9/16/2004	1065	24020	47380	23360	11.88	7.30
9/16/2004	1066	25440	40480	15020	7.51	4.69
9/16/2004	1067	22640	44600	21960	10.98	6.88
9/16/2004	1068	24020	45480	21460	10.73	6.71
9/16/2004	1069	25440	39940	14500	7.25	4.53
9/16/2004	1070	22640	45700	23060	11.53	7.21
9/16/2004	1071	24020	49500	25480	12.74	7.86
9/16/2004	1072	25440	42280	16820	8.41	5.26
9/16/2004	1073	22640	46180	23540	11.77	7.38
9/16/2004	1074	24020	48060	24040	12.02	7.51
9/16/2004	1075	25440	41600	16160	8.08	5.05
9/16/2004	1076	22640	45220	22580	11.29	7.06
9/16/2004	1078	22640	46660	24020	12.01	7.51
9/16/2004	1079	25440	40360	14920	7.46	4.66
9/16/2004	1080	24020	46840	24620	12.31	7.69

Total = 697840 1650760 762940 381.47 236.42

Soil Haul Information						
Date	Ticket #	Tare	Gross	Net	Tons	CY
9/17/2004	1081	22640	45500	22860	11.43	7.14
9/17/2004	1082	24020	48520	24500	12.25	7.66
9/17/2004	1083	22640	46580	23940	11.97	7.48
9/17/2004	1084	24020	50360	26340	13.17	8.23
9/17/2004	1085	22640	44620	22180	11.09	6.93
9/17/2004	1086	24020	47460	23440	11.72	7.33
9/17/2004	1087	22640	44300	21660	10.83	6.77
9/17/2004	1088	24020	48220	24200	12.1	7.56
9/17/2004	1089	22640	43100	20460	10.23	6.39
9/17/2004	1090	24020	45720	21700	10.65	6.78
9/17/2004	1091	22640	44380	21720	10.86	6.70
9/17/2004	1092	24020	48800	24780	12.39	7.74
9/17/2004	1093	22640	43520	20880	10.44	6.53
9/17/2004	1094	24020	45200	21180	10.59	6.62
9/17/2004	1095	22640	45520	22880	11.44	7.15
9/17/2004	1096	24020	48580	22580	11.28	7.05
9/17/2004	1097	22640	47500	24860	12.43	7.77
9/17/2004	1098	24020	48280	24260	12.13	7.58
9/17/2004	1099	25440	41880	16540	8.27	5.17
9/17/2004	1100	22640	50340	27700	13.85	8.66
9/17/2004	1101	24020	48080	24040	12.02	7.51
9/17/2004	1102	25440	42520	17080	8.54	5.34
9/17/2004	1103	22640	50080	27440	13.72	8.56
9/17/2004	1104	24020	48460	24440	12.22	7.84
9/17/2004	1105	25440	41840	16400	8.2	5.13
9/17/2004	1106	22840	44800	22280	11.13	6.98
9/17/2004	1107	24020	47940	23920	11.96	7.48
9/17/2004	1108	25440	41420	15980	7.99	4.99
9/17/2004	1109	22840	44820	22280	11.14	6.96
9/17/2004	1110	24020	45360	21340	10.67	6.87

Total = 708340 1382160 673820 336.91 210.57

Grand Total, Week of 13 September 2004 1,018.38 636.49

Week of 20 September 2004

Table F-5
Soil Hauled to Asbestos Cell at Lincoln County Landfill
BNSF Libby Yard Response Action 2004
Week of 4 October 2004

Soil Haul Information						
Date	Ticket #	Tare	Gross	Net	Tons	CY
10/4/2004	1712	25720	57060	31340	15.67	9.79
10/4/2004	1713	26100	45840	19540	9.77	6.11
10/4/2004	1714	26100	43480	17380	8.68	5.43
10/4/2004	1715	25720	57480	31740	15.87	9.92
10/4/2004	1716	26100	44920	18820	9.41	5.88
10/4/2004	1717	25720	81040	35320	17.66	11.04
10/4/2004	1718	26100	44820	18720	9.36	5.65
10/4/2004	1719	25720	51340	25620	12.81	8.01
10/4/2004	1720	26100	41380	15260	7.63	4.77
10/4/2004	1721	25720	50960	25240	12.62	7.89
10/4/2004	1722	26100	42200	16100	8.05	5.03
10/4/2004	1723	25720	50120	24400	12.2	7.63
10/4/2004	1724	26100	39480	13380	6.69	4.18
10/4/2004	1725	25720	51320	25600	12.8	8.00
10/4/2004	1726	26100	42100	16000	8	5.00
10/4/2004	1727	25720	50480	24760	12.38	7.74
10/4/2004	1728	26100	40620	14520	7.26	4.54
10/4/2004	1729	25720	51060	25340	12.67	7.92
10/4/2004	1730	26100	42180	16080	8.04	5.03

Total 492480 907620 415140 207.57 129.73

Total loads = 19

Soil Haul Information						
Date	Ticket #	Tare	Gross	Net	Tons	CY
10/8/2004	1873	22200	49820	27620	13.81	8.63
10/8/2004	1874	26260	51060	24800	12.4	7.75
10/8/2004	1875	25100	41840	16740	8.37	5.23
10/8/2004	1876	22200	49340	27140	13.57	8.48
10/8/2004	1877	26260	51340	25080	12.54	7.84
10/8/2004	1878	25100	43180	18080	9.04	5.65
10/8/2004	1879	22200	54380	32180	16.09	10.06
10/8/2004	1880	26260	55760	29500	14.75	9.22
10/8/2004	1881	25100	43180	18060	9.03	5.64
10/8/2004	1882	22200	53540	31340	15.67	9.79
10/8/2004	1883	26260	56960	30700	15.35	9.59
10/8/2004	1884	25100	42200	17100	8.55	5.34
10/8/2004	1885	22200	50980	28780	14.39	8.99
10/8/2004	1886	26260	55440	29180	14.59	9.12
10/8/2004	1887	25100	43420	18320	9.16	5.73
10/8/2004	1888	22200	55080	32880	16.44	10.28
10/8/2004	1889	26260	56660	30400	15.2	9.50
10/8/2004	1890	25100	42520	17420	8.71	5.44
10/8/2004	1891	22200	52500	30300	15.15	9.47
10/8/2004	1892	26260	55340	29080	14.54	9.09
10/8/2004	1893	25100	40880	15680	7.94	4.96
10/8/2004	1894	22200	52240	30040	15.02	9.39
10/8/2004	1895	26260	55620	29360	14.68	9.18
10/8/2004	1896	25100	41840	16740	8.37	5.23
10/8/2004	1897	22200	48440	26240	13.12	8.20
10/8/2004	1898	26260	53860	27600	13.8	8.63
10/8/2004	1899	25100	42480	17380	8.69	5.43
10/8/2004	1900	26260	56780	30520	15.26	9.54
10/8/2004	1901	25100	42420	17320	8.66	5.41
10/8/2004	1902	26260	55540	29280	14.64	9.15
10/8/2004	1903	22200	50380	28180	14.09	8.81
10/8/2004	1904	25100	43880	18780	9.39	5.87
10/8/2004	1905	26260	56000	29740	14.87	9.29
10/8/2004	1906	24920	54500	29580	14.79	9.24
10/8/2004	1907	22200	50740	28540	14.27	8.92
10/8/2004	1908	25100	42000	16900	8.45	5.28
10/8/2004	1909	26260	55320	29060	14.53	9.08

Total 911700 1847540 935840 467.92 292.45

Total loads = 37

207.57 129.73
467.92 292.45

Grand Total, Week of 4 October 2004 675.49 422.18

Grand Total Loads 56

Appendix G

Documentation of Imported Clean Backfill

TABLE G-1

**Summary of Imported Clean Backfill
From Remp Sand and Gravel
BNSF Libby Yard Response Action 2004**

Week	Weekly Tons	Weekly Cu. Yards
9/27/2004	2063.86	1289.91
10/4/2004	2,833.79	1,771.12
10/11/2004	3,032.74	1,895.46
10/18/2004	5,868.81	3,668.01
10/25/2004	3,814.75	2,384.22
11/1/2004	178.36	111.48
Total	17,792.31	11,120.19

TABLE G-2

**Summary of Imported Clean Backfill
From Remp Sand and Gravel
BNSF Libby Yard Response Action 2004
Week of 27 September 2004**

Sub-Batch Haul Information						
Date	Ticket #	Tare	Gross	Net	Tons	CY
9/28/2004	1751	24060	58180	34120	17.08	10.66
9/28/2004	1752	24060	58180	34120	17.06	10.66
9/28/2004	1753	24060	55800	31740	15.87	9.92
9/28/2004	1754	24060	57320	33260	16.83	10.39
9/28/2004	1755	24060	58780	32700	16.35	10.22
9/28/2004	1756	24060	56320	32260	16.13	10.08
9/28/2004	1757	24060	54660	30600	15.3	9.56
9/28/2004	1758	24060	55060	31000	15.5	9.69
9/28/2004	1759	24060	58000	33840	16.97	10.61
9/28/2004	1760	24060	58120	34060	17.03	10.64
9/28/2004	1761	24060	57720	33660	16.83	10.52
9/28/2004	1762	24060	57060	33000	16.5	10.31
9/28/2004	1763	24060	56200	32140	16.07	10.04
9/28/2004	1764	24060	53700	29640	14.82	9.26
9/28/2004	1765	24060	60360	36320	18.16	11.35
9/28/2004	1766	24060	62020	37960	18.96	11.86

Total = 384960 915480 530520 **265.28** **165.79**

Sub-Batch Haul Information						
Date	Ticket #	Tare	Gross	Net	Tons	CY
9/29/2004	1767	24040	58600	34560	17.28	10.80
9/29/2004	1768	24040	51880	27940	13.97	8.73
9/29/2004	1769	24040	59780	35740	17.87	11.17
9/29/2004	1770	24040	59420	35380	17.69	11.06
9/29/2004	1771	24040	58760	34720	17.38	10.85
9/29/2004	1772	24040	61180	37140	18.57	11.61
9/29/2004	1773	24040	60680	36640	18.32	11.45
9/29/2004	1774	24040	58740	34700	17.35	10.84
9/29/2004	1775	24040	57760	33720	16.88	10.54
9/29/2004	1776	24040	57660	33620	16.81	10.51
9/29/2004	1777	24040	57580	33540	16.77	10.48
9/29/2004	1778	24040	58760	34720	17.38	10.85
9/29/2004	1779	24040	59020	34980	17.49	10.93
9/29/2004	1780	24040	60800	36760	18.38	11.49
9/29/2004	1781	24040	55900	31860	15.93	9.98
9/29/2004	1782	24040	56780	32740	16.37	10.23
9/29/2004	1783	24040	58120	34080	17.04	10.65
9/29/2004	1784	24040	58700	34660	17.33	10.83
9/29/2004	1785	24040	55400	31360	15.68	9.80
9/29/2004	1786	24040	59080	35040	17.52	10.95
9/29/2004	1787	24040	60900	36860	18.43	11.52
9/29/2004	1788	24040	55220	31180	15.58	9.74
9/29/2004	1789	24040	57140	33100	16.55	10.34
9/29/2004	1790	24040	58520	34480	17.24	11.09
9/29/2004	1791	24040	57940	33900	16.95	10.59
9/29/2004	1792	24040	59860	35820	17.91	11.19
9/29/2004	1793	24040	57580	33540	16.77	10.48
9/29/2004	1794	24040	58260	34220	17.11	10.69
9/29/2004	1795	24040	58560	34520	17.26	10.16
9/29/2004	1796	24040	57440	33400	16.7	10.44
9/29/2004	1797	24040	58860	34840	17.42	10.26
9/29/2004	1798	24040	57040	33000	16.65	10.59
9/29/2004	1799	24040	58120	34080	17.54	10.86
9/29/2004	1800	24040	57220	33180	16.59	10.37

Total = 817360 1978280 1158920 **579.46** **362.18**

Sub-Batch Haul Information						
Date	Ticket #	Tare	Gross	Net	Tons	CY
9/30/2004	1801	24040	61040	37000	18.5	11.56
9/30/2004	1802	24040	58280	34240	17.12	10.70
9/30/2004	1803	24040	58320	34280	17.14	10.71
9/30/2004	1804	24040	59280	35240	17.62	11.01
9/30/2004	1805	24040	60820	36880	18.29	11.43
9/30/2004	1806	24040	58380	34340	17.13	10.71
9/30/2004	1807	24040	60380	36340	18.17	11.36
9/30/2004	1808	24040	59880	35760	17.88	11.18
9/30/2004	1809	24040	61620	37580	18.79	11.74
9/30/2004	1810	24040	59780	35720	17.86	11.16
9/30/2004	1811	24040	58680	34640	17.28	10.80
9/30/2004	1812	24040	56880	32780	16.38	10.24
9/30/2004	1813	24040	57840	33800	16.9	10.56
9/30/2004	1814	24040	58380	34340	17.17	10.73
9/30/2004	1815	24040	59360	35320	17.66	11.04
9/30/2004	1816	24040	53940	29900	14.95	9.34
9/30/2004	1817	24040	53560	29540	14.77	9.23
9/30/2004	1818	24040	58380	34340	17.17	10.73
9/30/2004	1819	24040	52780	28720	14.38	8.88
9/30/2004	1820	24040	56880	32780	16.38	10.06
9/30/2004	1821	24040	57820	33780	16.69	10.56
9/30/2004	1822	24040	56940	32900	16.45	10.01
9/30/2004	1823	24040	60500	36460	18.23	11.39
9/30/2004	1824	24040	56080	32040	16.02	10.01
9/30/2004	1825	24040	57280	33240	16.62	10.39
9/30/2004	1826	24040	58440	34400	17.7	11.06
9/30/2004	1827	24040	59320	35280	17.64	11.03
9/30/2004	1828	24040	59100	35060	17.53	10.96
9/30/2004	1829	24040	55860	31820	15.91	9.94
9/30/2004	1830	24040	55320	31280	15.84	9.78
9/30/2004	1831	24040	59960	34920	17.31	10.82
9/30/2004	1832	24040	58900	34860	17.43	10.69
9/30/2004	1833	24040	58420	34380	17.09	11.06
9/30/2004	1834	24040	59680	35640	17.82	11.14
9/30/2004	1835	24040	57140	33100	16.55	10.34
9/30/2004	1836	24040	57920	33880	16.94	10.58
9/30/2004	1837	24040	60560	36520	18.26	11.41

Total = 889480 2157780 1268300 **834.15** **508.34**

Sub-Batch Haul Information						
Date	Ticket #	Tare	Gross	Net	Tons	CY
10/1/2004	1838	24040	60360	36320	18.16	11.35
10/1/2004	1839	24040	58700	34660	17.33	10.83
10/1/2004	1840	24040	58120	34080	17.04	10.65
10/1/2004	1841	24040	58260	34220	17.11	10.69
10/1/2004	1842	24040	57400	33360	16.68	10.43
10/1/2004	1843	24040	60440	36400	18.2	11.38
10/1/2004	1844	24040	61060	37040	18.52	11.58
10/1/2004	1845	24040	60240	36200	18.1	11.31
10/1/2004	1846	24040	60840	36800	18.4	11.50
10/1/2004	1847	24040	60140	36100	18.05	11.28
10/1/2004	1848	24040	58220	34180	17.09	10.68
10/1/2004	1849	24040	57740	33700	16.85	10.53
10/1/2004	1850	24040	63520	39480	19.74	12.34
10/1/2004	1851	24040	58340	32300	16.15	10.09
10/1/2004	1852	24040	57520	33480	16.74	10.46
10/1/2004	1853	24040	57700	33660	16.83	10.52
10/1/2004	1854	24040	56640	32580	16.25	10.16
10/1/2004	1855	24040	48020	23980	11.99	7.49
10/1/2004	1856	24040	60700	36660	18.33	11.46
10/1/2004	1857	24040	60160	36120	18.06	11.29
10/1/2004	1858	24040	58060	34020	17.01	10.63
10/1/2004	1859	24040	58320	34280	17.14	10.68
10/1/2004	1860	24040	57880	33840	16.92	10.58
10/1/2004	1861	24040	57640	33600	16.8	10.50
10/1/2004	1862	24040	58620	34580	17.28	10.81
10/1/2004	1863	24040	58360	34320	17.18	10.76
10/1/2004	1864	24040	58820	34780	17.48	11.18
10/1/2004	1865	24040	60420	36380	18.19	11.37
10/1/2004	1866	24040	57340	33300	16.65	10.41
10/1/2004	1867	24040	57760	33720	16.86	10.54
10/1/2004	1868	24040	57320	33280	16.64	10.40
10/1/2004	1869	24040	58540	34500	17.25	10.76
10/1/2004	1870	24040	61020	36980	18.49	11.56
10/1/2004	1871	24040	57200	33160	16.58	10.36

Total = 817360 1987346 1169980 **554.99** **365.82**

Grand Total, week of 27 September 2004 **2063.86** **1289.91**

TABLE G-7

**Summary of Imported Clean Backfill
From Remp Sand and Gravel
BNSF Libby Yard Response Action 2004
Week of 1 November 2004**

<i>Sub-Ballast Haul Information</i>						
Date	Ticket #	Tare	Gross	Net	Tons	CY
11/1/2004	10637	25500	48440	22940	11.47	7.17
11/1/2004	10638	25500	47340	21840	10.92	6.83
11/1/2004	10639	25500	48580	23080	11.54	7.21
11/1/2004	10640	25500	48920	23420	11.71	7.32
11/1/2004	10641	25500	48740	23240	11.62	7.26
11/1/2004	10642	25500	49460	23960	11.98	7.49
11/1/2004	10643	25500	47220	21720	10.86	6.79
11/1/2004	10644	25500	50380	24880	12.44	7.78
11/1/2004	10645	25500	48340	22840	11.42	7.14
11/1/2004	10646	25500	49740	24240	12.12	7.58
11/1/2004	10647	25500	51200	25700	12.85	8.03
11/1/2004	10648	25500	50780	25280	12.64	7.90
11/1/2004	10649	25500	50640	25140	12.57	7.86
11/1/2004	10650	25500	50080	24580	12.29	7.68
11/1/2004	10651	25500	49360	23860	11.93	7.46

Total =	382500	739220	356720	178.36	111.48
----------------	---------------	---------------	---------------	---------------	---------------

Grand Total, Week of 1 November 2004	178.36	111.48
---	---------------	---------------

Appendix H

Applicable or Relevant and Appropriate Requirements

APPENDIX H
APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (ARARS)
BNSF LIBBY RAILYARD RESPONSE ACTION 2004
BURLINGTON NORTHERN SANTA FE RAILWAY COMPANY
LIBBY, MONTANA

Citation	Requirement or Activity	Compliance Strategy
29 CFR 1910.134	Use of respiratory protection.	<ul style="list-style-type: none"> • Each employer was responsible for compliance with this standard. • Full-face PAPRs were used initially, with the possibility of downgrading to negative-pressure, half-face respirators.
29 CFR 1910.134, 29 CFR 1926.95, 29 CFR 1926.96, 29 CFR 1926.100, 29 CFR 1926.101, 29 CFR 1926.102, 29 CFR 1926.103	Site work requires the use of personal protective equipment.	<ul style="list-style-type: none"> • Personal protective equipment was worn onsite at all times. The minimum personal protective equipment included a hard hat, safety glasses, and safety boots. This equipment complied with applicable ANSI standards. • Additional personal protective equipment was required in the Contamination Reduction Zone and Exclusion Zone. This included respiratory protection, disposable suits, and protective gloves.
29 CFR 1910.151(b)	If an infirmary, clinic, or hospital for treating injured employees is not within close driving distance to the workplace, a person or persons shall be adequately trained to render first aid. Adequate first aid supplies shall be readily available.	<ul style="list-style-type: none"> • St John's Lutheran Hospital at 350 Louisiana Avenue in Libby, Montana, is less than 1 mile from the work areas. Therefore, this regulation is not applicable.

APPENDIX H
APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (ARARS)
BNSF LIBBY RAILYARD RESPONSE ACTION 2004
BURLINGTON NORTHERN SANTA FE RAILWAY COMPANY
LIBBY, MONTANA

Citation	Requirement or Activity	Compliance Strategy
29 CFR 1926.1101 (29 CFR 1910.1001)	Worker protection measures to include engineering controls, worker training, labeling, respiratory protection, bagging of waste, 0.1 f/cc eight-hour time-weighted average and 1 f/cc 30-minute excursion permissible exposure limit.	<ul style="list-style-type: none"> • Requirements of these standards have been addressed in the project specification. Some of the worker protection measures are listed below. • Engineering controls included keeping the soil wet and providing decontamination facilities for personnel and equipment. • Workers were trained in accordance with federal asbestos abatement requirements before starting work at the site. Montana State certification is not required because the soils removal does not fit the definition of an asbestos project as defined by the Montana Department of Environmental Quality (MDEQ). A requirement of asbestos licensure is that they have proper training for their job designation. • All excavated soils were loaded directly into dump trucks for transport to Lincoln County Landfill, north of Libby. The truck beds were tarp-covered prior to transport, and the truck beds were covered in transit both to and from the landfill.. • Signs and/or warning tape and traffic cones were used at the site perimeter to keep unauthorized personnel out of the site and Exclusion Zone. • Waste generated from personal protective equipment and during decontamination was disposed of in asbestos warning-labeled 6-mil bags. The bags are to be leak-tight polyethylene bags labeled in accordance with 29 CFR 1910.1200(f) of OSHA's Hazard Communication standard. • Respiratory protection and protective clothing were worn by personnel entering the Exclusion Zone. • Worker breathing zone samples were collected from workers in the Exclusion Zone to document exposure. Additionally, area samples were collected at the Exclusion Zone perimeter. Decisions to upgrade respiratory protection were based on the airborne concentrations detected and the maximum use concentrations of the respirators being used.
40 CFR 61.154	Disposal of asbestos-containing waste	Potential asbestos-containing material generated with the project was disposed of in a landfill operated by Lincoln County, Montana.

APPENDIX H
APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (ARARS)
BNSF LIBBY RAILYARD RESPONSE ACTION 2004
BURLINGTON NORTHERN SANTA FE RAILWAY COMPANY
LIBBY, MONTANA

Citation	Requirement or Activity	Compliance Strategy
40 CFR Part 763.90	The removal project is completed after visible hydrated biotite has been removed and the soil samples do not detect Libby amphibole.	<ul style="list-style-type: none"> EMR collected soil samples to document Libby amphibole content of the soil following cleaning.
42 CFR Part 84	Respirator filter selection	Although other filters may provide adequate protection, P100 have been specified in the EMR Work Plan.
49 CFR parts 171 and 172	Regulates the transportation of asbestos-containing waste material. Requires waste containment and shipping papers.	A shipment record accompanied each shipment to the landfill. Dump truck beds were covered with tarps for waste transportation; the truck beds were covered while traveling to and from the landfill..
American National Standard for High-Visibility Safety Apparel ANSI/ISEA 107-1999	Exposure to vehicular equipment at the site.	Class 2 garments were worn since they were intended for use in activities where greater visibility is necessary during inclement weather conditions or in work environments with risks that exceed those for Class 1.
ARAR's for preventing damage to unique or sensitive areas, such as floodplains, historic places, wetlands, and fragile ecosystems, and for restricting other activities that are potentially harmful because of where they take place.	Site work	The project site is a BNSF Railroad Company right-of-way. Therefore, issues with respect to floodplains, historic places, wetlands, fragile ecosystems, or activities that may be potentially harmful are not applicable.
Backup Alarm - citable under Section 5(a) (1) of the Occupational Safety and Health Act.	Under Section 5(a)(1) of the Occupational Safety and Health Act (the General Duty Clause), employers must keep their workplaces free from recognized hazards	Backup alarms on heavy equipment are required.

APPENDIX H
APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (ARARS)
BNSF LIBBY RAILYARD RESPONSE ACTION 2004
BURLINGTON NORTHERN SANTA FE RAILWAY COMPANY
LIBBY, MONTANA

Citation	Requirement or Activity	Compliance Strategy
Emission Control requirements of 40 CFR 61.145 and Waste handling provisions of 40 CFR 61.150	Prevent visible emissions during vacuuming, soil transfer, loading the soil into vessels for transfer to the landfill.	<ul style="list-style-type: none"> • Soils were wetted prior to handling and remained wet throughout handling so that no visible emissions were released from the site. • Each truckload of soil was manifested using a special waste manifest. Photocopies of the manifests will be retained by Kennedy/Jenks Consultants and the originals will be supplied to BNSF for their records. • Air sampling was conducted during loading and decontamination procedures in order to sample for potential airborne fibers.
	Asbestos-containing waste transportation and disposal at the approved landfill.	<ul style="list-style-type: none"> • Kennedy/Jenks Consultants on behalf of BNSF and the transporter ensured that a waste shipment record was appropriately completed and signed by the generator, and accompanied the waste to the disposal site. • A copy of the waste shipment record was provided to the landfill operator or owner. • A copy signed by the landfill owner or operator is to be returned to BNSF within 30 days.

APPENDIX H
APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (ARARS)
BNSF LIBBY RAILYARD RESPONSE ACTION 2004
BURLINGTON NORTHERN SANTA FE RAILWAY COMPANY
LIBBY, MONTANA

Citation	Requirement or Activity	Compliance Strategy										
29 Code of Federal Regulations 1910.145(d)(4)	Caution signs warning of asbestos-containing material and/or asbestos-related activity.	<p>The perimeter of the exclusion zone was posted with asbestos warning signs. The posting must:</p> <p>(1) Be displayed in such a manner and location that a person can easily read the legend.</p> <p>(2) Conform to the requirements for twenty inch by fourteen-inch [50.8-centimeter by 35.56-centimeter] upright format signs specified in title 29 Code of Federal Regulations 1910.145(d)(4) and this paragraph; and</p> <p>(3) Display the following legend in the lower panel with letter sizes and styles of a visibility at least equal to those specified below.</p> <table><thead><tr><th>Legend</th><th>Notation</th></tr></thead><tbody><tr><td>DANGER</td><td>2.5 cm [1 in.] Sans Serif, Gothic, or Block.</td></tr><tr><td>ASBESTOS DUST HAZARD</td><td>2.5 cm [1 in.] Sans Serif, Gothic, or Block.</td></tr><tr><td>CANCER AND LUNG DISEASE HAZARD</td><td>1.9 cm [3/4 in.] Sans Serif, Gothic, or Block.</td></tr><tr><td>Authorized Personnel Only</td><td>14 Point Gothic</td></tr></tbody></table>	Legend	Notation	DANGER	2.5 cm [1 in.] Sans Serif, Gothic, or Block.	ASBESTOS DUST HAZARD	2.5 cm [1 in.] Sans Serif, Gothic, or Block.	CANCER AND LUNG DISEASE HAZARD	1.9 cm [3/4 in.] Sans Serif, Gothic, or Block.	Authorized Personnel Only	14 Point Gothic
Legend	Notation											
DANGER	2.5 cm [1 in.] Sans Serif, Gothic, or Block.											
ASBESTOS DUST HAZARD	2.5 cm [1 in.] Sans Serif, Gothic, or Block.											
CANCER AND LUNG DISEASE HAZARD	1.9 cm [3/4 in.] Sans Serif, Gothic, or Block.											
Authorized Personnel Only	14 Point Gothic											
Montana Title 75. Environmental Protection Chapter 2. Air Quality, Part 5. Asbestos Control	Montana Department of Environmental Quality (DEQ) asbestos-related regulations.	<ul style="list-style-type: none">Most of the Montana DEQ regulations are not applicable because the project does not involve asbestos-containing materials in building materials.A courtesy notification was sent to Montana DEQ, but a permit is not required since the waste materials are soils.										